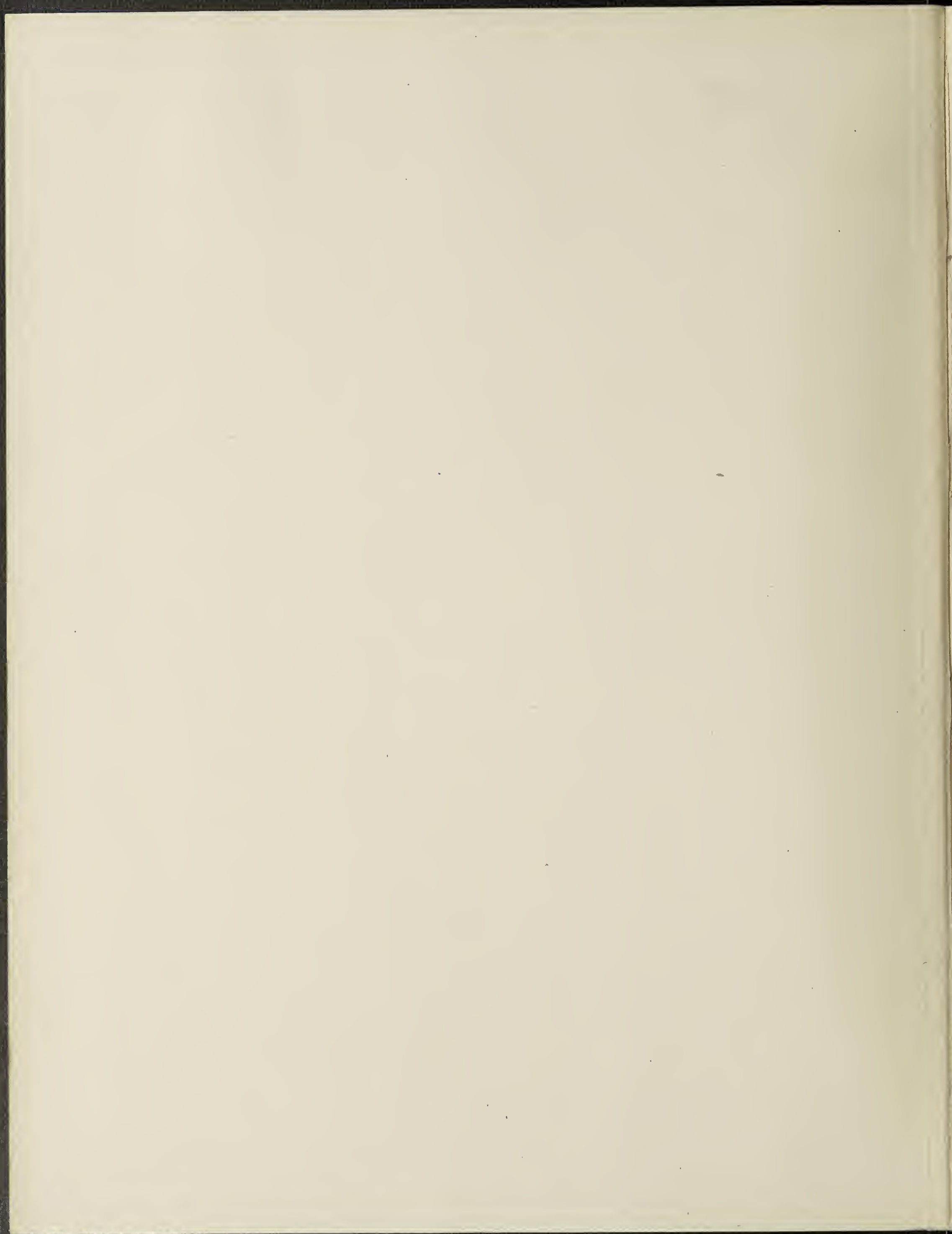
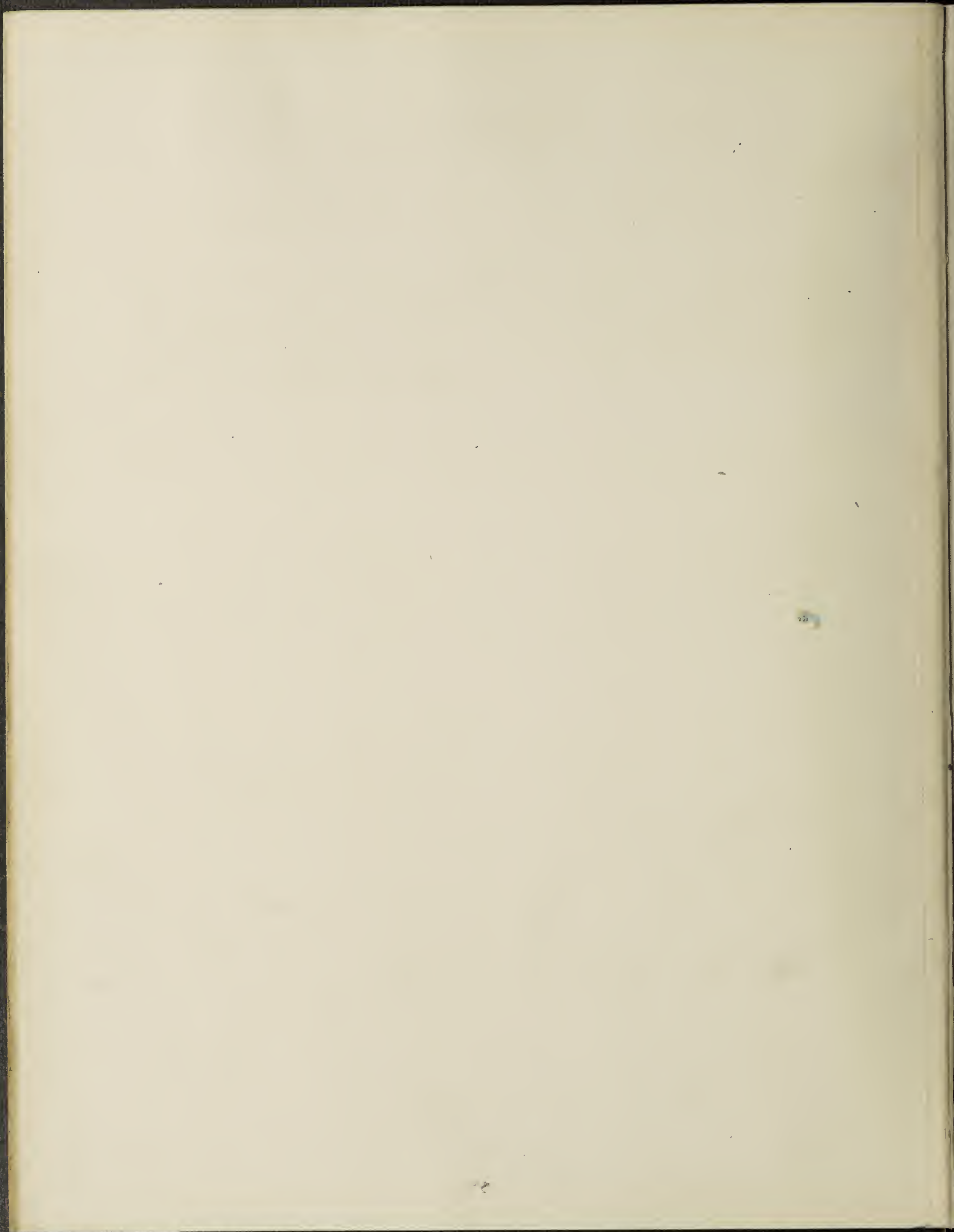


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THE AMERICAN FOOD JOURNAL



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Vol. XIII

JANUARY, 1918

No. 1

The Patriotic Food Show

THE Patriotic Food Show conducted by the Illinois State Council of Defense closed its doors on the 13th of the month, after a nine days' run to what, but for the inclement weather, would have been record crowds. Despite two blizzards in less than ten days, the Chicago Coliseum was comfortably crowded most of the time.

As similar shows will undoubtedly be staged in other states, we are glad to be able to give our readers a fairly comprehensive description of how this most significant state-run enterprise was organized and conducted.

As announced in these columns last month, the Patriotic Food Show was produced under the auspices of the Illinois State Council of Defense, with the active co-operation of the Illinois Division of the U. S. Food Administration. The personnel of the former body is as follows:

Samuel Insull Chairman, B. F. Harris Vice-Chairman, John P. Hopkins Secretary, J. Ogden Armour Treasurer, Dr. Frank Billings, Mrs. Joseph T. Bowen, John H. Harrison, Levy Mayer, John G. Oglesby, V. A. Olander, David E. Shanahan, John A. Spoor, Fred W. Upham, Charles H. Wacker, John H. Walker; E. W. Lloyd Asst. Secretary.

The committee in direct charge of the Patriotic Food Show consisted of the following Chicagoans:

Louis M. Stumer Chairman, W. E. Skinner Vice-Chairman, P. E. Fleming Secretary, Miss E. Allen, S. H. Anderson, Frank H. Armstrong, Miss Isabel Bevier, Mrs. J. D. Black, Mrs. J. C. Bley, E. L. Byfield, Mrs. F. D. Countiss, L. A. Crowell, Wm. H. Culver, B. A. Eckhart, Mrs. Lynden Evans, R. L. Evans, Robt. G. Gould, C. R. Grover, Louis H. Hartman, Geo. Higginson, D. H. Howard, Aaron Jones, D. F. Kelly, A. D. Lasker, F. C. Letts, E. W. Lloyd, W. D. McKunkin, Edward Morris, Jr., B. J. Mullaney, Mrs. Raymond Robins, Dr. J. D. Robertson, E. M. Rosenthal, Miss Jennie Snow, Samuel B. Steele, Ed-

ward F. Swift, Ezra Warner, F. Edson White, Thos. E. Wilson, D. M. Yates, C. E. Hoyt.

Mr. Stumer, who is a man of affairs and varied interests, applied to the management of the Show his best efforts, early and late, for a period of about a month, and the record of the Show as a financial success is largely due to his talent for matters demanding executive ability.

From among the membership of the Patriotic Food Show Committee Mr. Stumer chose the following executive committee: W. E. Skinner Vice Chairman, L. A. Crowell, C. E. Hoyt, E. M. Rosenthal, C. R. Grover.

Assisting Mr. Stumer was Mr. Sumner H. Anderson of the National Dairy Council.

The dominant note of the Patriotic Food Show was the substitution of one food for another. It was not a thrift show. The economics of food were by no means forgotten; but they were not the controlling factor. The many thousands of people who attended the Show were given the latest and best available information as to the interchangeability of foods of the same general type, great stress being laid upon the fundamentals of recipe-making.

It was essentially a series of demonstrations, the heart of the Show being the various demonstration centers presided over by the several institutions of learning located in Illinois. All other features of the program were subordinated to this central feature, the federal exhibits, the constant succession of addresses in the lecture room and the commercial exhibits forming a background for the real work of the Show, which was performed by the University of Illinois, the School of Domestic Arts and Sciences, Lewis Institute, the Chicago Normal School and the University of Chicago.

The committee in general charge of demonstrations was: Mrs. Lynden Evans Chairman, Miss Gertrude Van Hoesen Executive Secretary, Miss

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GENERAL VIEW OF THE MAIN FACADE WITHIN WHICH WERE DEMONSTRATION CENTERS AND BOOTHS FOR COMMERCIAL EXHIBITS. U. S. FOOD ADMINISTRATION EXHIBIT IN THE FOREGROUND.



THE THREE FUNDAMENTAL METHODS OF FOOD PRESERVATION—CANNING, REFRIGERATION AND DEHYDRATION—SEEN SIDE BY SIDE. NATIONAL DAIRY COUNCIL EXHIBIT IN THE LEFT BACKGROUND.



IN THE PROTEIN SECTION WERE PREPARED FOR SAMPLING BY THE VISITORS ALL VARIETIES OF MEAT SUBSTITUTES.

Jennie Snow, Miss Elizabeth Allen, Mr. Sumner H. Anderson, Mr. R. G. Gould.

Decisions as to what foods should be demonstrated were made by this committee, and the value of the Patriotic Food Show, expressed in terms of dietetics, is largely attributable to its efforts.

In the various sections the department heads were as follows:

Proteins—Miss Mamie Bunch of the University of Illinois, assisted by Miss Naomi O. Newburn.

Fats—Miss Lillian Kemp of the Chicago School of Domestic Arts and Sciences, assisted by Mrs. Charles Gray.

Sugars—Miss Katharine Livingston of Lewis Institute, assisted by Miss Clara Gott.

Fruits and Vegetables—Miss Frances Swain of the Chicago Normal School, assisted by Miss M. R. Spray.

Starches—Miss Agnes K. Hanna of the University of Chicago, assisted by Miss Emma Sparks.

Dietaries—Miss Cora E. Gray of the University of Illinois, assisted by Miss Ethel Kolbe of the University of Chicago.

The Patriotic Food Show was the first occasion on which a number of institutions—universities and schools—have joined to give a message to the public through the medium of demonstration. The underlying message of the demonstrations was a *positive* message—what we *can* use in place of what we have been asked *not* to use.

In the protein section, new kinds of fish, such as eulachon, burbot, whiting, sablefish, bowfin and herring, all of which are obtainable at the chief local mar-

kets, the use of milk in the diet, especially of small children, and the use of game, poultry, cheese and legumes, were demonstrated as meat savers. Development in the use of these foods will release the meat needed by our defenders and Allies. The impression gained by the women in charge of this section was that the public is very much in earnest and ready to discuss diet from the standpoint of food values rather than merely from that of appetite and taste.

In the section on fats was taught the use of vegetable oils in soups, sauces and salads. Frying was deliberately omitted, as it should be discouraged under present conditions. The use of butter was taught as justifiable only on the table, and the trimmings of bacon left from squaring bacon pieces to the government requirements were exhibited as the only form of bacon we should purchase.

The section on sugar demonstrated the use of forms of sweetening other than granulated sugar. Glucose, molasses, honey, maple syrup and dried fruits were shown as providing sources for sweetness. Some new ideas were worked out, for instance, the use of sweet potato flour and banana flour to save sugar in cakes. The candies were the most popular feature at this booth.

In the fruits and vegetables section more liberal place in the diet for these articles of food was urged, on the ground that they supply minerals and other health-giving properties necessary in the diet, and since they are highly perishable, cannot be transported like some of the other staples. The people watching the demonstration were much interested in



THE SECTION DEVOTED TO FATS GAVE A CLEAR UNDERSTANDING OF THE PRACTICABILITY OF OLEOMARGARINE AND NUT MARGARINE AND OF VEGETABLE OILS OF ALL SORTS.

this message and in learning about new fruits and vegetables and new ways to cook old ones.

The section on starches, such as rye, corn, oats, barley, rice, taught the use of new flours and new combinations of different flours in breads, pastries, and cakes, and here loaves of various kinds of bread were exhibited, together with a static exhibit of different flours and the vegetable oils to be used as shortening. The keynote was the demonstration of the binding quality of white flour and how white flour must be used with other flours to produce anything like the degree of lightness which we desire in bread.

In the menu section examples of the three daily meals were shown and discussed, based on menus worked out in the Home Economics Office of the Department of Agriculture in Washington.

All these demonstrations proved two points: even bearing in mind the heavy export demand for certain time-honored staples there are on hand in America supplies of alternative foods ample for all Americans; changes in the diet rendered necessary by the new order of things must be made by the American housewife herself, and must be made intelligently, seriously, soberly and advisedly.

A war-time cook-book, compiled for the occasion, was sold to practically every visitor for the modest sum of 5 cents.

In each section many assistants worked loyally and effectively under the general direction of the department heads. In at least one section, that of proteins, every woman in the demonstration center was a col-

lege graduate and many of them held a doctor's degree.

The list of speakers from day to day was as follows: *Saturday, January 5th.*

Ray L. Evans, Illinois Division U. S. Food Administration.

Col. A. D. Kniskern, Depot Quartermaster, U. S. Army.

Frederick C. Walcott of the Federal Food Administration.

Capt. Lee Nichols from the firing line.

Samuel Insull, Chairman, Illinois State Council of Defense.

Harry A. Wheeler, Federal Food Administrator for Illinois.

Miss Jane Addams of Hull House.

Sunday, January 6th.

Miss Elizabeth Kelly of the Federal Food Administration.

Alexander Cairns of Washington, D. C.

Dr. John Rutledge, representing the Ohio Division of the Food Administration.

R. I. Scoville of the Dairy Division of the U. S. Department of Agriculture.

Monday, January 7th.

Miss Elizabeth Kelly.

Miss Theresa Shier, Librarian, Food Publicity Director of Michigan.

Alexander Cairns.

Edgar A. Bancroft, Executive Committee of the Illinois State Council of Defense.

Edward F. Dunne, formerly governor of Illinois.



DEMONSTRATIONS IN THE SUGAR SECTION WERE MADE WITHOUT USING SUGAR—GLUCOSE, MOLASSES AND HONEY BEING SUBSTITUTED.

Lt. A. H. Naismith, Canadian Field Artillery.

Tuesday, January 8th.

Miss Cora Gray, University of Illinois.
Mrs. Paul Howe, University of Illinois.
Miss Virginia Chandler, Women's Committee, Illinois Division, National Council of Defense.
Prof. Elizabeth Allen, University of Chicago.
R. I. Scoville, Dairy Division, U. S. Department of Agriculture.
Capt. Charles E. Merriam of the Signal Corps, Aviation Department, U. S. Army.
Dr. Emil G. Hirsch of Chicago.

Wednesday, January 9th.

Mrs. Dines Foelling, Dean, Agricultural College of Iowa, Ames, Ia.
Mrs. John C. Blev, Illinois Housewives' League.
Miss Katherine Blunt, Department of Home Economics, University of Chicago.
Miss Elizabeth Kelly.
Mrs. Kellogg Fairbank, Chairman of Speakers' Committee, Illinois State Council of Defense.
Mrs. Jean Prescott Adams, Lecturer on Domestic Science.
Miss Laura Winkelman, Home Economics Department, Lewis Institute.
Miss Florence King, President, Women's Association of Commerce of Chicago.
Miss Agnes Forman, Vice Chairman of Speakers' Committee of Women's Committee, Illinois State Council of Defense.
Capt. Lee Nichols.

Thursday, January 10th.

Dr. John Rutledge.
Isabel Bevier, University of Illinois.
Henry B. Ward, University of Illinois.
Carl B. Roden, Librarian, Chicago Public Library.
David E. Shanahan, Speaker of Illinois House of Representatives.
E. Davenport, Dean of College of Agriculture, University of Illinois.
Victor Olander, Secretary of Illinois Federation of Labor.
Lt. Andrew N. Naismith, Canadian Field Artillery.

Friday, January 11th.

Dr. Thomas G. Hull, U. S. Food Administration.
John Esten Bolling, Drying Systems, Inc., Chicago.
R. I. Scoville.
Mrs. Clara Witt of Kansas City, Mo.
Dr. Wilbur E. Post of the Red Cross Mission to Europe.
T. P. O'Connor, member of the British Parliament.
Lt. A. E. Naismith.

Saturday, January 12th.

No program was possible due to storm conditions.

Sunday, January 13th.

Dr. Wm. T. Foster, President of Reed College, Portland, Oregon, and member of Pacific Coast Red Cross Commission to Europe.
Clarence Darrow of Chicago.
Miss Elizabeth Kelly.
Mrs. Lynden Evans, Chairman of Committee in charge of Demonstrations.



ALL WHO VISITED THE FRUITS AND VEGETABLES SECTION LEFT WITH A KEENER APPRECIATION OF THEIR VALUE IN THE DIET.

Miss Gertrude Van Hoesen, Executive Secretary of Committee in Charge of Demonstrations.

Mr. S. S. McClure of *McClure's Magazine*.

Sergt. Hugh Desmond, Canadian Infantry.

This very formidable array of talent was secured by Mr. C. R. Bechtel and Miss Elizabeth Kelly of Wisconsin, who is now with the U. S. Food Administration. The subjects treated bore upon the war situation, either in its general aspects or with particular reference to the food situation.

The matter of publicity was handled by Mr. Louis H. Hartman assisted by Mr. M. J. Adams.

The government exhibits occupied several large sections and came from the U. S. Food Administration, the U. S. Department of Agriculture, and the U. S. Bureau of Fisheries. In charge of the Food Administration exhibit were Dr. Thomas G. Hull and Mr. J. W. Cover. The Department of Agriculture exhibit was presided over by Mr. A. A. Ormsby, and that of the Bureau of Fisheries by Mr. Brown. In the opinion of this JOURNAL, Washington overlooked a remarkable opportunity in that their exhibits were not sufficiently dynamic to engage the attention to which they were entitled. Particularly was the exhibit of the Bureau of Fisheries disappointing to those civilians who for many weeks had labored night and day to bring about a state of affairs which would result in an increase in the consumption of fish in Chicago—and especially of frozen fish. The Department of Agriculture exhibit was limited to a demonstration of cottage cheese, a small unit dehydrator which was not operated during the course of the Show, and a number of placards and cabinets filled with interesting but mute argu-

ments in favor of an enlarged dietary. The exhibits of the United States Food Administration were favorably placed and attracted more attention than did those just mentioned, but they, too, suffered in comparison with the balance of the Show. Part of the federal display would have been considered adequate in a purely static exhibition, although that is by no means true of all of it.

The exhibit of the Fuel Conservation Division of the Illinois State Council of Defense was designed to educate the public in the proper use of fuel; the Garden Bureau of the Chicago Department of Public Works gave an interesting showing of what can be done in the way of raising fruits and vegetables in vacant lots; and the Library Section of the Illinois Division of the U. S. Food Administration had a working exhibit having to do with the bibliography of food conservation in all of its aspects.

Some time before the appointment of the Patriotic Food Show Committee, the matter of securing exhibitors was entrusted to Mr. R. G. Gould of THE AMERICAN FOOD JOURNAL, whose labors were lightened in no small degree by the action of Mr. Samuel Insull in loaning the services for a period of three weeks of about a dozen of the best salesmen on the staff of the Commonwealth Edison Company. Mr. Jack Coulter, a volunteer aid, served as Mr. Gould's principal assistant and gave valiant service, although working in a field foreign to his regular vocation.

The Show would not have been a possibility but for the active co-operation of the food industry and it is highly gratifying to realize that with but few



AMONG THE MANY STARCHY FOODS DEMONSTRATED IN THE SECTION DEVOTED TO THAT SUBJECT WERE RYE, CORN, OATS, RICE, BARLEY AND COTTONSEED MEAL.

exceptions those who were invited to co-operate availed themselves of that opportunity. The list of exhibitors who bought space and exhibited foods or equipment appropriate to the occasion is as follows:

Aluminum Goods Mfg. Co., Manitowoc, Wis.; American Can Co., New York, N. Y.; Anchor Mills, Chicago, Ill.; Arbuckle Brothers, New York, N. Y.; Armour & Co., Chicago, Ill.; Armour Grain Co., Chicago, Ill.; A. H. Barber & Co., Chicago, Ill.; Barley Foods Co., Morgantown, W. Va.; Berhalter Health Foods Co., Chicago, Ill.; The Boosters, Inc., Chicago, Ill.; Booth Fisheries Co., Chicago, Ill.; Brunswick-Balke-Collender Co., Chicago, Ill.; Bunte Brothers, Chicago, Ill.; Burney Brothers, Chicago, Ill.; Burnham & Morrill Co., Portland, Maine; Carson, Pirie, Scott & Co., Chicago, Ill.; Chicago Pickle Packers, Chicago, Ill.; Chicago Tofu Co., Chicago, Ill.; Corn Products Refining Co., New York, N. Y.; Deming & Gould, Chicago, Ill.; The Douglas Co., Cedar Rapids, Iowa; Downey-Farrell Co., Chicago, Ill.; Drying Systems, Inc., Chicago, Ill.; Edison Electric Appliances Co., Chicago, Ill.; J. F. Elam Sales Service, Inc., Chicago, Ill.; Enev Shortening Co., Chicago, Ill.; Foulds Milling Co., Chicago, Ill.; Fruit Dispatch Co., New York, N. Y.; General Chemical Co., New York, N. Y.; The Hebe Company, Seattle, Wash.; Hills Brothers Co., New York, N. Y.; Hinsdale Sanitarium, Hinsdale, Ill.; Horlick's Malted Milk Co., Racine, Wis.; Ben T. Hosking & Bro., Chicago, Ill.; Wm. Hoyt & Co., Chicago, Ill.; Ice Cream Mfg. of Chicago, Chicago, Ill.; Interstate Cotton Seed Assn., Memphis, Tenn.; John F. Jelke Co., Chicago, Ill.; Kellogg Products, Inc., Buffalo, N. Y.; J. L. Kraft & Bros. Co., Chicago, Ill.; Landers, Frary & Clark, New York, N. Y.; Libby, McNeil & Libby, Chicago, Ill.; McLaughlin & Co., Chicago, Ill.; McNeil & Higgins, Chicago, Ill.; Miller & Hart, Chicago, Ill.; Minneapolis Cereal Co., Minneapolis, Minn.; A. G. Morse & Co., Chicago, Ill.; Wm. J. Moxley, Inc., Chicago, Ill.; National Assn. White Corn Millers, Cincinnati, Ohio; National Dairy Council, Chicago, Ill.; National Poultry, Butter & Egg Association, Chicago, Ill.; Novelty Candy Co., Chicago, Ill.; Oelrich & Berry Co., Chicago, Ill.; Penick & Ford, Ltd., New Orleans, La.; Pillsbury Flour Mills Co., Minneapolis, Minn.; Potato Men of Chicago, Chicago, Ill.; Price Flavoring Extract Co., Chicago, Ill.; Quaker Oats Co., Chicago, Ill.; C. C. Robbins, Inc., Chicago, Ill.; A. I. Root Co., Medina, Ohio; Rothschild & Co., Chicago, Ill.; Royal Baking Powder Co., New York, N. Y.; Rueckheim Bros. & Eckstein, Chicago, Ill.; Rumford Baking Powder Co., Providence, R. I.; Russell Miller Milling Co., Minneapolis, Minn.; Sawyer Biscuit Co., Chicago, Ill.; Schulze Baking Co., Chicago, Ill.; Sherer-Gillett Co., Chicago, Ill.; Thomas S. Smith, Chicago, Ill.; Southern Cotton Oil Co., New York, N. Y.; Sprague, Warner & Co., Chicago, Ill.; Standard Oil Co., of Indiana, Chicago, Ill.; Steele Wedeles Co., Chicago, Ill.; Swift & Co., Chicago, Ill.; Syme Eagle & Co., Chicago, Ill.; Chas. W. Triggs Co., Chicago, Ill.; United Cereal Mills, Quincy, Ill.; United Fig & Date Co., Chicago, Ill.; U. S. Slicing Machine, La Porte, Ind.; Vilter Mfg. Co., Milwaukee, Wis.; W. M. Walker, Chicago, Ill.; Washburn Crosby Co., Minneapolis, Minn.; Waukesha Pure Food Co., Waukesha, Wis.; Wilson & Co., Chicago, Ill.

The Manufacture of Nut Margarine

By GLENN H. PICKARD

THE name, nut margarine, has been given to that type of oleomargarine which contains only vegetable oils or fats. Generally these oils are derived from the cocoanut and the peanut, thus sponsoring the use of the word "nut" in connection with oleomargarine to differentiate that product from oleomargarines containing animal fats. While oleomargarine has been on the market in this country for a long time, the advent of nut margarines is comparatively recent, the oldest having been available only a few years.

Within the last few months there has been a veritable burst of nut margarines on the market and there are more to come. Doubtless, the disturbed condition of the world's food supply has been a factor in the increased production of these products, but the sheer merit of nut margarine is in no small way responsible for the recent marked increase in its popularity as a food product among the American people. It is, indeed, no experiment, for in Europe it has been sold for many years. The people of the United States have been slow to adopt oleomargarine, whether vegetable or animal, as a standard article of diet. We consume only about $1\frac{1}{2}$ pounds per capita, while Denmark, a country famed for its dairying interests, uses 43 pounds. Norway, another country of no small importance in the output of dairy products, consumes $33\frac{1}{2}$ pounds per capita; Holland, a great dairying country, selling vast quantities of butter to other nations, uses 20 pounds; and Great Britain $8\frac{1}{2}$ pounds per capita. The reason for our slowness in making use of these products must be psychological. Perhaps it is a combination of the tendency of the American people toward extravagance in their food products and their prejudice against the use of anything as a substitute for the time-honored butter.

Raw Materials Used.

The ingredients of nut margarines are: first, hard fats, the great bulk of which are derived from the cocoanut, although palm kernel oil and hydrogenated or hardened oils are used in considerable quantities; second, soft fats or those which are liquid at ordinary temperatures, the most important of which are peanut oil, cottonseed oil, corn oil, sesame oil, colza oil, rape and soya bean oils. In this country very little other than peanut oil is used in nut margarine, though so far as quality and physical properties are concerned any of the others could be substituted. The third ingredient is cultured milk, and the fourth salt.

The Hard Fats.

The flavor of butter results from the growth of bacteria in the milk from which it is churned. It does not come from the butter fat itself. A nut margarine, to be acceptable as a substitute, must possess a flavor like that of butter. Therefore, the oils from which it is made must have no characteristic flavor of their own which would necessarily be different from that of butter, since such a flavor would mingle with that of the milk and impart a foreign taste to the finished product. For this reason the oils, after being obtained from the raw materials, are subjected to a very careful refining and deodorizing process which renders them bland and tasteless. In fact, the quality of

oils for nut margarine is measured by the degree of neutrality of their flavor. The refining consists in removing, by treatment with caustic soda, all the fatty acids which may be present. These acids differ materially in flavor from the neutral oil whence they were derived. After neutralization the oils are bleached with fullers earth and then subjected to a current of super-heated steam, sometimes in an open tank and sometimes under a vacuum. The passage of the steam through the oil removes the volatile materials which give the oil its characteristic flavor and unpleasant taste.

In the manufacture of cocoanut oil the dried meats of the cocoanut—termed copra—are crushed. That is, the oil is gotten out of them. All vegetable oils, when the envelope which nature puts around them is broken, tend to become rancid and ill-tasting. In the making of copra the cocoanut is broken and its meat dried in one of several ways, some of which are very crude, the result being that the oil is damaged to such an extent that a careful refining, bleaching and deodorizing is necessary. When derived from a first class copra, a properly bleached and refined cocoanut oil is a snow white solid possessing no characteristic flavor. At about 76 degrees F. it becomes liquid. This melting point varies somewhat, due to the location from which the oil is secured, climatic conditions prevailing during the development of the nut and the handling of the copra and oil previous to refining. Sometimes, in order to vary the melting point of cocoanut oil, it is chilled and pressed in hydraulic presses and the oils, liquid at the temperature at which the operation takes place, are removed and the solid crystals of higher melting point remain. The oil generally used by margarine makers, however, is the whole cocoanut oil.

Palm kernels are the seeds of a species of palm bearing an oil fruit. These kernels are surrounded by a hard shell which is removed in the locality where the nuts are grown. By far the greatest proportion of the palm kernels crushed comes from the west coast of Africa. This oil is very much like cocoanut oil, both in appearance and in chemical and physical properties. In fact, it is next to impossible to tell them apart in a mixture. There is no reason, however, so far as the ultimate consumer is concerned, why palm kernel oil should not be substituted in part or in whole for cocoanut oil.

Hydrogenated Oils.

Recently a new phase of the edible oil industry has been developed, that of hardening or hydrogenation. By this process liquid oils, such as peanut, cottonseed, soya bean—in fact, any liquid, animal or vegetable oils, are hardened by a chemical treatment which adds hydrogen to them. When the process is properly handled, the melting point of the resulting material can be regulated to a nicety and the oils contain no appreciable amounts of deleterious substances, so that they are therefore perfectly wholesome and, in consequence, legitimate constituents of edible products. The soft oils are obtained by pressing in hydraulic presses the material in which they are found in nature. Inasmuch as all of them possess some flavor, they are refined and deodorized before use. The nut margarines

of the United States are white, so that these oils must also be bleached to a pale straw shade. We find them then as bland, tasteless oils of very light color and free from admixtures of any sort. None but the finest are used for margarine manufacture.

Milk.

The milk used for nut margarine is skimmed or whole milk or whole milk to which cream has been added. The decision as to which type will be used depends on the will of the manufacturer. As a rule, however, a skimmed or whole milk is generally used. When this material is brought into the factory it is first pasteurized. That is, all bacteria present are killed. Then there is added to it a pure culture of a lactic acid-producing bacterium. These bacteria feed upon the milk sugar and by their life produce from it lactic acid which sours the milk. A great deal of research has been done on this subject and there are now available pure cultures of bacteria which, when the milk is properly ripe, will give to it a flavor which is day by day uniform in quality and strength. In order to do this, absolute cleanliness must prevail, for if other bacteria are left in the milk they will impart to it their own flavors and these would be prejudicial to the quality of the finished product.

The last ingredient is common salt, of which nothing need be said.

The First Step: Preparing the Milk.

With the raw materials once in the factory, the steps of the manufacturing process are these:

First, the milk is pasteurized and ripened. This is done in steam-jacketed tanks containing an agitator. The essential element is temperature control, for the heat must not be raised too high or the milk will be changed in physical characteristics and flavor, while if it is not high enough the bacteria will not be killed. In the ripening process prescribed conditions must be rigidly maintained, for the temperature at which the action takes place controls the rate and extent of its progress. Obviously, to secure a uniform result, absolute control must be had.

Mixing the Fats.

The second step is to mix and melt the various hard fats, and this is done in steam-jacketed tanks, equipped with agitators. In some factories the soft fat is blended with the hard at this point, while in others blending takes place in the churn. The percentage of soft fat in the mixture varies with the hardness of the hard fat and with the season of the year. The harder the coconut oil, the more liquid oil must be added to make the finished product of the right consistency. In the summer temperatures are higher and the margarine, when in use, will be softer, and consequently less soft oil must be used during that season. The amount of soft oil added varies from 5 to 25 per cent. There is no set rule about it. Some factories in this country average about 20 per cent. The average for all European margarines is given roughly as 25.8 per cent of the margarine as sold, and the figure for Danish margarine is 22.7 per cent, so it can be seen that our practice follows closely upon that of the European countries. The fat when melted is run into the churn at a predetermined and definite temperature with the cultured milk. If the soft fat has not been mixed with the hard fat when the latter was melted it is now added.

Churning the Milk and Fats.

The amount of milk used varies from 25 to 35 per

cent of the whole mixture. In determining this point the operator uses his skill and judgment.

The fundamental principle of the churning operation is to form an emulsion of the milk with the oil in order that the utmost degree of contact of the two may be brought about. Inasmuch as an emulsion consists of minute droplets of the oil in the milk, the surface at which contact is made is very great indeed, and so the effect of one upon the other is at a maximum. The temperature of the liquids in the churn must be very carefully watched and the operation stopped at the time when the emulsion is most perfect. The hard and soft fats and cultured milk are now in closest possible contact with each other.

Solidifying the Emulsion.

The next step is to solidify this emulsion. This is accomplished in one of two ways, the most prevalent in this country being to run the emulsion from the churn into a stream of ice water which instantly solidifies it, because at that temperature the coconut oil is solid. The solidified fat containing the milk is now separated from the water and placed in sweet, clean wooden boxes mounted on wheels and are run into a room where they are allowed to ripen. The other method is to run the emulsion onto chilled rolls, which cause its solidification, and from these rolls the material is moved to the ripening room.

Ripening and Working.

The temperature of this room must be kept absolutely constant, for here two things happen. The bacteria in the milk continue to work and thus produce flavor-giving substances which are absorbed by the fat. This development goes on best at certain temperatures close to 70 degrees. In order, then, to insure uniformity of product, the rate of this development must be constant and thus its extent always the same.

There is also a change in the physical condition of the fat. The fat has a tendency to form crystals of appreciable size, and when this takes place to any extent, the margarine is said to be grainy. A grainy margarine is not a desirable one in that it departs from butter and therefore is not pleasing to the eye of the consumer, although there is no difference in flavor between a smooth and a grainy margarine and they are otherwise identical. After this ripening process the mixture is placed in a machine which works it on a large circular rotating table. Plates are set in such a way that the material is turned in from the outside and out from the inside. There is also a large fluted roll which passes over the butter, forcing it down and thus squeezing it. The result of this operation is to force out the excess water and milk and, at the same time, to work in the added salt. The operation is also performed at a definite temperature and the amounts of salt added are carefully weighed. When finished, the margarine contains about 1 per cent of the original solid milk curd.

From this table the material goes to the room in which it is made into prints by hand. It is spread out in a layer of proper depth and then a print box is forced through it and its space filled, and a print is formed. These are placed in large tray-like boxes, mounted on wheels, and run into the chilling room to set. The low temperature stops all action and hardens the margarine, which is then wrapped in paper, inserted in a paraffin-coated carton and is ready for the market.

Why Nut Margarine Should Be Used.

From this brief description of the manufacturing process it can readily be seen that, when properly made

in a well-operated factory, nut margarine is as wholesome and clean a food as can be had. Our government further safeguards the public by demanding that everything that goes into nut margarines shall be sterilized, and it sends its inspectors frequently to these plants to see that they are kept clean and free from all sources of contamination. This combination of precautions precludes there being any disease-carrying bacteria in the product as it leaves the factory. Further, it is to the manufacturer's interest to keep everything clean, since if he fails to do so his product is liable to be deficient in keeping properties and thus to become unpopular.

Nut margarines are delicate and should be handled with care. Co-operation on the part of middlemen and grocers in handling shipments would help to safeguard the public and popularize the material. For instance, if the grocery receiving force, when they see the word "oleomargarine" on the box, instead of carelessly throwing the box to one side, would put it at once into the cooler, as they would a shipment of first-class creamery butter, there would be less tendency toward contamination. In almost all instances when oleomargarine has been received in a spoiled condition, this is due to the fact that after leaving the factory it came in contact with bacteria, or flavor-imparting bodies, which contaminated it. For instance, one shipment was made in a car partly filled with oranges, some of which were rotten, and the margarine suffered in consequence through no fault whatever of the manufacturer.

Nut margarines are always fresh when shipped from the factory. A well-operated factory will insist upon weekly orders from its jobbers, rather than allow them to take a big stock and order at less frequent intervals. Furthermore, there is no period of the season when, by reason of a surplus of raw materials, it is necessary to make up amounts of nut margarine in excess of the demand and then store it. The raw materials for this product have a constant source and thus can be procured to meet the current demand.

One thing a discerning buyer wants in his food is uniformity. There is no food product which is so susceptible to means of control which make for uniformity as nut margarine. For instance, all raw materials can be tested and proved chemically to be sweet and pure and to possess a neutral flavor before they go into the process at all. Then the ripening of the milk, in regard to both the purity and character of the culture, and the extent of the process, is under absolute control. For instance, the process is stopped when a chemical test shows that a certain amount of lactic acid has been formed. The other elements in the development of the flavor, such as the temperature throughout each step and the length of time the nearly finished product is allowed to develop its flavor, are also within control, and the texture of the product can be varied by proper manipulation of temperatures, timing and methods of handling. And, lastly, the melting point can be varied to suit the climatic conditions which are to exist between production and consumption of the product by the addition, as was stated previously, of more or less soft oil. The more oil present, the lower the melting point. In this part of the country more soft oil is added in winter and less in summer, thus insuring a more nearly uniform condition when the butter reaches the table.

Nut margarines contain no animal fat whatever. They are purely vegetable, so that those who, by rea-

son of creed or preference, prefer vegetable products can satisfy their demand by the purchase of nut margarines.

Digestibility and Food Value.

In the processes of digestion nut margarines are no stumbling block, for repeated experiments have proved that vegetable fats are equal to all animal fats, and in some cases better, in their rate and completeness of digestion. Our own government experts have found, for instance, that the completeness of digestibility of common vegetable oils is as follows:

	Per Cent.
Olive oil	97.8
Cottonseed oil	97.8
Peanut oil	98.3
Cocoanut oil	97.9
Sesame oil	98.6

In other words, they are practically identical. Bourot and Jean showed that creamery butter was 96 per cent digestible, while nut margarine was 98 per cent, and Von Gerlach found that both were 97 per cent. These figures prove that nut margarines are equal in rate and extent of digestion to dairy or creamery butter and to oleomargarines, and that, in fact, there is no appreciable difference between the three. It has been further proved that the fats found in creamery or dairy butter and animal or nut margarine all have practically the same food or energy-producing value. And, further, pound for pound the fats will produce two and one-half times as much energy as protein or carbohydrate. Therefore one ought to eat a proper proportion of fats to keep his diet well balanced. Taste and pocketbook can control one's choice as to what fats will be used as a spread for bread and in the kitchen, since all fats are equal when it comes to the amount of nourishment and energy they will furnish the body.

Recently much has been done and said with reference to fat-soluble accessory growth substances, sometimes called food hormones or vitamins. It has been shown that vegetable oils do not contain in appreciable amounts these materials necessary to the proper growth and development of animal life. The materials do occur, however, in animal fats, green vegetables, milk, butter, eggs and other bodies. Some have gone so far as to say that nut margarines should not be fed to children because they lack these materials. However, when one considers how very small a proportion of a child's diet consists of butter and that a properly fed child will receive these substances in much larger amounts from foods which form a far greater proportion of his diet than butter, as, for instance, green vegetables, milk and eggs, one wonders whether the substitution of a hormone-free butter would produce an appreciable effect upon the growth of the child.

In this connection it might be well to suggest that while the literature on the subject shows that the vegetable fats in nut margarine which supplant the milk fats in butter contain no food hormones, it does not say that the complete nut butters do not. Inasmuch as milk contains oil-soluble food accessory substances, and the fats, although free from them in themselves, are brought in intimate contact with milk in the process of manufacture, is it not likely, or at least possible, that these materials are dissolved by the fats of nut margarines and are, therefore, present in the finished product, though not in the fat ingredients of it?

Apropos of this question, we quote from an editorial in the *Journal of the American Medical Association* as follows:

"Despite the importance of these researches and the unquestioned information which they furnish in harmony with many data already established by American investigators, we believe that in fairness to the many useful butter substitutes and margarines now available, a word of caution should be uttered. No one has questioned the edibility and the high degree of digestibility of essentially all of these products that have been examined as to their alimentary utilization. In this respect, like the familiar fats, they leave little to be desired. Oleomargarine has long been immune

from attack on the ground of poor digestibility by its numerous frequently unfair detractors. On the other hand, the fat-soluble food hormones or vitamins are reported to be present in the leaves of green vegetables as well as in the milk, butter and eggs that are commonly found in the usual dietary. A liberal varied ration is thus likely to avert danger of lack of vitamins. We must not go to the extreme of forgetting the calorific value of fats quite aside from their content of food accessory substances."

Cereal Substitutes for Wheat

By CARL MINER,
of the Miner Laboratories, Chicago.

WE MUST use less wheat. During 1917, in spite of all the reasons to the contrary, the per capita consumption of wheat in this country was actually above normal. This is readily explained: as in all periods of high-priced foodstuffs those who could not afford the more expensive foods like meat and vegetables increased their consumptions of the great staple—wheat bread. As a result, we are now facing the absolute necessity of reducing our wheat consumption, and to this end the Federal Food Administration has assumed complete control of the distribution of the wheat crop and is doing everything possible to insure its proper utilization.

Wheatless days, no high-grade patent flour and no food wheat in poultry feeds are realities and much more stringent restriction of our use of wheat is a probability of the immediate future.

Other Cereals Must Replace Wheat.

We cannot save the necessary amount of wheat merely by eating *less*. We must eat something else in place of it, and the obvious substitutes are the other foodstuffs of the same class, that is, the cereals—corn, oats, barley, rye, buckwheat, rice, and the grain sorghums. The problem of increasing our consumption of these cereals is primarily the problem of the direct replacement of wheat by either complete or partial substitution in food products where wheat is the only cereal now used.

On the basis of government reports, one is justified in assuming that approximately two-thirds of our cereal food consists of wheat—the remaining one-third being divided among the other cereals. This is not due to an overwhelming production of wheat, for the wheat crop of this country weighs about the same amount as the oat crop and about one-fourth as much as the corn. These are the three important cereal crops, for the production of all the other cereals together—barley, rye, buckwheat and the rest—amounts to less than one-half the weight of the oat or wheat crop. These figures seem to validate the statement that as a nation we prefer for our cereal food wheat and wheat mainly in the form of white flour, since it is as white flour that most of our humanly-consumed wheat is marketed. Further, they justify the assumption that no actual shortage of cereal foodstuffs exists except such as is produced by our own insistence on having the cereal we prefer. The corn and oats produced and not used for human food, amount to fully six times as much as the wheat used for human food.

Moreover, there is at present no sound scientific basis for judging that the milled products from wheat differ substantially in their food value from the milled

products of other cereals.

It is apparent from the following table of analyses that the listed products are very similar in composition. All are classed as carbohydrate foods, as containing high percentages of carbohydrates and low percentages of protein, fat and fiber, and as having heat of combustion values varying within comparatively narrow limits.

	Oat Flour %	Corn Flour %	Rye Flour %	Barley Flour %	Rice Flour %	Wheat Flour %
Moisture	8.1	11.0	9.5	10.3	9.3	12.00
Crude Protein...	15.5	8.6	15.1	11.1	6.7	11.50
Crude Fat	6.1	1.2	2.4	1.5	0.7	0.75
Ash	1.6	0.4	1.6	1.4	0.8	0.47
Crude Fiber	1.6	1.0	0.9	0.7	0.6	0.18
Carbohydrates ..	67.1	77.8	70.5	75.0	81.9	75.10
Fuel value—calo- ries per lb....	1,795	1,645	1,650	1,640	1,660	1,620

With the exception of potatoes, no other foods are available in this country in such quantities as to be considered in the class of substitutes for wheat. These cereals are not only similar in their content of the components listed in the table—the constituents commonly considered in determining food value—but they are also so similar in the other and less well-known characteristics, such as vitamin content and nature of protein, that there is nothing in their chemical composition to indicate that any one of the other cereals may not be efficiently substituted for a considerable percentage of the wheat in the normal American dietary.

Bread the Food in Which Substitution Must Be Made.

Just as we have come to take most of the cereal portion of our ration in the form of wheat, so we have become habituated to using that wheat as white bread, and it is probably well within the facts to assume that 75% of the wheat consumed for human food is eaten in this form. This means that the great problem in the substitution of other cereals for wheat is the problem of utilizing these in a bread as similar as possible to the white bread to which we are accustomed.

We must admit at once that we are absolutely unable to produce from any other flour the same light bread that we can make from wheat flour. This is due to the fact that wheat contains gluten which when moist is sticky and tenacious—more like chewing gum than any other common substance—and which gives its own characteristics to the dough, enabling it to be expanded to large volume without falling. No other flour has this characteristic and consequently no other flour will make bread in which the ratio of weight to volume is the same as in wheat bread. For this rea-

son we are unable at present to produce a bread even remotely resembling wheat bread without adding a considerable amount of wheat flour. Our problem therefore becomes the problem of producing bread from wheat flour as a basis with the addition of as large a percent as possible of some other cereal or cereals.

To the solution of this problem bakers, housewives, chemists, milling and baking technologists have bent their energies during recent months. So far little has been accomplished for which we can claim novelty or originality. The addition of any other cereal flour to wheat flour reduces the volume of the resultant loaf and in most cases gives a loaf of darker color, both of which characteristics are less attractive to the average consumer. In some cases, however, the resultant loaf is of a flavor superior in the judgment of many persons to the straight wheat loaf. The consensus of opinion among baking experts appears to be that in a commercial bakery 10% of corn meal or flour, or 20% of rolled oats or barley flour can be used with wheat flour to produce a loaf of volume, texture and flavor that will satisfy the public. Since corn and oats are available in abundant quantities it seems wise to concentrate our efforts on improving the methods of utilizing these rather than in using other cereals less available quantitatively and commercially. This concentration of effort on corn and oats should not, however, exclude from consideration other possible substitutes—such, for example, as barley, of which we produce 200,000,000 bushels annually and which is at present utilized for human food in very limited quantities. Excellent flour can be made from barley and one large firm of millers has already set aside a small mill for its production. The grain sorghums, kafir, milo, feterita, and kaoliang which are beginning to be raised in considerable quantities in the southern portion of the country can be milled to produce flour and meal of about the same character as corn flour and meal and when used in admixture with 90% of wheat flour they produce a very attractive bread.

Other Food Uses of Wheat.

So far we have dealt only with the substitution of other cereals for wheat in the baking of bread. There is a very large consumption of wheat flour in the production of other foodstuffs. Crackers, cakes, pies, muffins and biscuits among the baked products, and in addition puddings, gravies, thick soups, noodles, pancakes and many other items in the normal bill-of-fare require the use of considerable quantities of wheat flour. In many of these foods other cereal flour may be partially or completely substituted.

Where mere thickening is required many cooks already use corn starch, and since this thickening action

is due entirely to the gelatinization of the starch present and the efficiency of the material is measured by its starch content, there is no reason why that material or any one of the cereal flours should not completely take the place of wheat flour for this purpose. In pastries, cakes, biscuits, muffins and similar baked products it is extremely difficult to produce anything closely resembling the results to which we are accustomed without the use of substantial per cents of wheat flour, because of the lack, as already explained, of gluten in other cereals. However, careful experimentation with the substitute flours we are considering will eventually discover a combination which will result in saving a very large per cent of the wheat flour now used for these products; for example, it is possible to make both an excellent baking powder biscuit and waffles from a mixture of 80% wheat flour and 20% barley or corn flour. This is a problem especially adapted to solution by the cook and housewife and it is one in which their co-operation can be of great value.

The statement applies with equal force to the problem of preparing pancakes and puddings, dumplings and all the multitudes of cookies, sweet breadstuffs and the like. Many of these problems must be solved by the individual housewife by experiment and in this work she must adopt new standards and not be content to determine only how closely the result of experiment resembles the wheat flour product but also whether it is itself edible and attractive without regard to former standards.

One of the difficulties the housewife will encounter will be that of obtaining the raw materials with which to work. She can buy wheat flour, corn meal, and rolled oats, but barley flour and corn flour are difficult to obtain at the grocery. It seems probable, however, that this difficulty will very soon be overcome.

Other Uses of the Cereals.

Naturally we may conserve wheat by using other cereals in other ways than as substitutes for wheat. The use of these cereals should be encouraged in every possible manner, since every pound of them used for human food decreases by a similar amount the quantity of wheat required for that purpose. Corn meal mush, hominy, boiled rice, pearled barley, are excellent foods and susceptible of use as the basis of a wide range of attractive food forms.

Remember that every individual has his share of this work to do: the baker, cook and housewife must produce foods of maximum palatability and minimum wheat content, but the person who consumes food without producing has just as great a duty to make an effort to appreciate the advantages of new food forms and not to present an insuperable wall of prejudice to the efforts of the food-producing class.

Herbie Hoover.

Little Herbie Hoover's come to our house to stay,
To make us scrape the dishes clean, an' keep the crumbs
away,
An' learn us to make war bread, an' save up all the grease,
For the less we eat of butter, the sooner we'll have peace.
An' all us other children, when our scanty meal is done,
We gather up around the fire an' has the mostest fun
A-listenin' to the proteins that Herbie tells about,
An' the Calories that git you

 Ef
 you
 don't
 watch
 out!

An' little Herbie Hoover says, when the fire burns low,
An' the vitamins are creepin' from the shadows, sof' and
slow,
You better eat the things the Foods Folks says they's plen-
ty of,
An' cheat the garbage pail, an' give all butcher's meat the
shove,
An' gobble up the corn pone an' veg'tables an' fish,
An' save your drippin' an' yer sweets an' lick clean ever' dish,
An' don't get fresh a-talkin of what you won't do without,
Or the Calories'll git you

 Ef
 you
 don't
 watch
 out!

—Sophie Kerr, in *Life*.

Aquatic Products as Food

By H. F. MOORE,
Deputy Commissioner, U. S. Bureau of Fisheries.

I HAVE been asked to write on "Marine Products as Meat Substitutes," but have taken the liberty to change the title. Some marine products are meats and most of them are the dietetic equivalent of meats, but they are not substitutes. They are not substitutes for anything. They stand on their own merits and should be eaten for what they are. They are good; they are nutritious; their use adds variety to the diet, and if the public will avoid competing for the kinds which are best known, and will buy what is seasonable, what is most abundant for the time being and requires least transportation to reach the consumer, they are economical.

We Americans pride ourselves on our enterprise and independence, but in some things we are the most conservative people in the world. Our markets in many respects are marvels. In normal times they are filled to overflowing with a variety of fruits and vegetables. We have them fresh at all seasons, and the multitude of excellent canned products exceeds that of any other part of the world, but that is due largely to our varied climate and soil, our desire to "live as well as anybody," and our willingness to pay the price.

But we have a meat-eating tradition, for which there is perhaps good historic economic basis in the primeval game supplies, and the vaster areas formerly available for grazing meat-producing animals. There has developed the myth that we lower the boasted American standard of living if meat is not served at practically every meal, and if a certain cut has the prestige of being the most expensive, that is what we must have, for our neighbor has it, and we are as good as he. A reasonable and correct standard of living should be based on the sufficiency, balance, digestibility, variety and palatableness of our diet and not on imitation of our more wealthy and probably less wise compatriots. The independence on which we pride ourselves is best exemplified by thinking for ourselves and not permitting somebody else to set the pace to our own and the nation's disadvantage.

Protein and Fat in Fish.

We have come to look on meat as the standard of proteinaceous foods and to regard anything which serves the same purpose in the diet as a substitute, and a substitute in food is likely to suffer the same lack of public esteem as shoddy in a coat. Nobody wishes to use a substitute. We all want the real thing, and marine foods are the real thing, as will be seen from the following table showing the percentages of proteins and fats in the edible parts of various standard animal foods, dressed.

It will be observed that there is no characteristic difference between these several foods. All have a high content of protein, which is the constituent which makes the animal foods particularly valuable, and for which they are principally used. There is no substitute for it, and most vegetable foods contain it in comparatively small proportions. The fats vary considerably, and, in general, the fishes have a lower content than mammals and fowls, but in this respect there are great seasonal differences, practically all fishes being deficient in this constituent immediately after the

spawning period. Some of the differences shown in the table are probably due to seasonal causes rather than to inherent diversity between the species enumerated, but there are certain fishes, such as the salmon, sablefish, eulachon, eel, butterfish, menhaden, grayfish, and others, which are conspicuously rich in oil and, therefore, are particularly valuable at this time when there exists the necessity for conservation of the ordinary animal fats.

Kind.	Protein, Per cent.	Fat, Per cent.
Sirloin steak	20.00	19.00
Chicken	24.30	2.60
Beef, round	23.00	9.00
Mutton, leg	18.30	19.00
Salmon, fresh	21.60	13.40
Shad	18.55	9.48
Mackerel	18.77	8.21
Eel	15.82	18.74
Butterfish	17.99	11.03
Striped bass	18.54	2.83
Flounder	13.82	.69
Halibut	18.35	5.18
Carp	19.07	1.26
Grayfish	17.61	9.04
Herring roe	17.53	2.41
Shad roe	23.40	3.78
Fish milt, or buck-roe.....	14.87	2.57

It is well known to the housewife of today that when the normal quantity of protein is eaten it is converted into the body tissues—muscle, blood, etc.—but if used in excess, part of it is converted into fats or consumed as fuel. For the first and important purpose it cannot be replaced. Fat, on the other hand, is valuable only as fuel, or, if stored in moderate quantities, it is useful for certain mechanical purposes, such as the insulation of the body and the conservation of its heat. Its place in the diet may be taken in part by starches and sugars. Therefore, even if some fishes at some seasons are poor in oils, they will supply the valuable protein, and their deficiency in fuel qualities can be made good by using a little more of the cheap vegetable foods accompanying the meal.

Digestibility of Fish.

In its digestibility, fish rates as highly as in its nutritive constituents, and numerous investigations furnish ample evidence that fish is as wholesome and as easily digested as other animal foods. Recent feeding experiments of the Department of Agriculture show that mackerel, butterfish, canned grayfish, and canned salmon are on a practical parity in the completeness with which their protein and fats are digested, the combined percentage for protein being 92.5 and for fat 92.6. These results were based on 18 experiments in feeding the fish as part of a mixed ration to six men.

Other Marine Foods.

The protein content of crustaceans (lobsters, crabs, shrimps) is a little lower than that of fish, but the chief difference in composition is a deficiency in fats. The mollusca (oysters, clams, mussels, scallops, etc.) also contain less protein and fat, but in addition to those two constituents they have from 1 to 4 per cent of glycogen or "animal starch," a carbohydrate of nutrient value, the presence of which in the higher

quantities produces the condition of so-called fatness when these shell fish are in prime condition. In their composition, oysters, mussels and clams, and probably other mollusca, resemble milk rather than meats and fish.

The flesh of whales, porpoises and other marine mammals probably has about the same composition as the meat derived from the mammals of the land, which it resembles in general appearance, taste and texture.

As terrapin and turtles have a high protein content, and some of them are rich in fats, they are particularly nutritious, though the quantity of refuse of shell, bones and viscera is so great that the proportion of nutrients to live-weight is small. Practically all of the turtles, tortoises and terrapins are edible, and one of them, the diamond back terrapin of the salt marshes of the Atlantic coast, has the distinction of furnishing the most costly animal food in the world. The land and fresh water species, of which there are many, might be used to advantage at this time.

Possibilities of a Marine Diet.

An important consideration frequently overlooked is the opportunity which aquatic foods afford for almost limitless variation of diet. In addition to the whales and porpoises, the numerous species of excellent shell fish, and the many kinds of turtles and terrapin, there are not less than 125 species of fish on the markets of the several sections of the country, and this number could be doubled if we were to utilize the kinds now caught and thrown away. While, in general, they resemble one another in composition, they differ widely in texture and flavor. When, in addition to this extraordinary wealth of raw material thought is given to the fact that many of these fishes are obtainable not only fresh or frozen, but pickled, dry salted, smoked and otherwise prepared, and that most of them can be cooked in many ways, the delectable possibilities of a sea food diet may be faintly appreciated.

The proper cooking of fish has an importance not generally understood. To most persons fish are fish and they are fried, broiled, baked or boiled indiscriminately, without reference to their qualities. Some fish are dry and others fat, some are firm and others soft, some are high-flavored and others bland or neutral in taste, and each should be cooked appropriately.

There has been considerable complaint among consumers that fish now costs as much as or more than beef, mutton or pork, and there is criticism that the Government, through its several agencies, is advocating the use of fish. The reduction of food prices is highly desirable, but while it is an important consideration at this time, it is not the most important. There is not enough of the usual animal foods to ration as in normal times the population, domestic and foreign, which is dependent on us, and the prime consideration is to get enough such food to go round even though the new kinds may cost as much as the old. We are willingly expending our men in ways that we are unaccustomed to, but which are necessary, and why not our money? We are asked to reduce our sugar consumption, not to curtail our living expenses, but to create a surplus to supply those who are bearing greater war burdens than we. We are asked to eat fish that other animal foods, more readily preserved and transported, may be in sufficient supply to

support armies and overburdened civil populations abroad.

Some of the high prices which the housekeeper is asked to pay are due to profiteering, which there is reason to believe will be taken care of before long, but many of them are due to lack of marketing knowledge. Most of us know little or nothing about the qualities of fishes. We buy certain kinds because we happen to know their names and we are prone to relish names rather than the things they represent. If the fish asked for is not in stock, some other kind is sometimes substituted. In a certain eastern city, and probably in others, a present-day inquirer for "sea trout" or squeteague is sold whiting, and the fish is eaten for what it is said to be and not for what it is. In this case it happens that the substitute, as a frozen fish, is better than what it purports to be, but also it probably costs a little more when it should be less.

This habit of buying names results in a great demand for the better-known fishes, the consumers are competing with one another for a limited supply, and the inevitable rise in price occurs. Let us eat these fish by all means if we can afford them, for their consumption is but a part of our present necessity, but before we complain of prices let us make sure that we are using ordinary "horse sense" in our marketing.

I do not wish to criticise the women of our country, except constructively and helpfully, for a larger proportion of women than of men are "doing their bit," but I have observed them both shopping and marketing and have not failed to be impressed by the different attitude with which they approach the two. If they were to consider values as carefully in selecting fish as in choosing hats, the difficulty in regard to prices would be partly solved.

For this difference in approaching the two duties, however, the fish dealers rather than the women are responsible. The dry goods merchant and the milliner educate their customers through their advertising and particularly by the attractive display of their commodities. The retail fish dealer rarely advertises and his display of stock often repels rather than attracts, notwithstanding the fact that the fish stall is susceptible of being made the most interesting and attractive in the market. What is needed more than anything else in order to make permanent from choice the public's present patriotic willingness to eat fish is the helpful co-operation of the retail fish trade, the exercise of salesmanship in assisting the purchaser to get what she really wishes, and the cleanly and tasteful display of marine foods so that the consumer may become familiar with their names, appearance and qualities, or learn, even, that such things exist.

The housewife may assist in the introduction of unfamiliar fishes which we have so long wasted by buying them when obtainable, or by persistently asking for them if not immediately in supply.

Some patience may have to be exercised, as fish are seasonal in their occurrence, and moreover, there is no small difficulty in distributing widely a perishable commodity for which there has been no previous demand. If we are unable to get what we want when we want it, we are but paying one of the penalties of our previous neglect to utilize the good things that we might have had.

Sugars Other Than Cane or Beet

By GEORGE L. TELLER,
of the Columbus Laboratories, Chicago.

ALTHOUGH cane is the one sugar with which we have all been familiar from earliest times because it has been the recognized sugar of commerce, it is not the sugar most common in the plant and animal economy. It is very generally distributed, however, throughout vegetable life. Besides being the sugar characteristic of sugar cane, sorghum, corn stalks, maple sap, sugar beet, and many other plants, it is a constituent of most fruits and vegetables.

Invert Sugar.

As a constituent of fruits, cane sugar is generally accompanied by its decomposition products commonly known as invert sugar: under certain influences, cane sugar readily undergoes a change and splits up into two other sugars, which together are frequently spoken of as invert sugar. These necessary influences are acids and certain enzymes, the latter of which are abundantly secreted by yeast and by the animal body. Because most fruits are somewhat acid in their nature, the cane sugar which was originally built up in them by the natural constructive activity of the living fruit has been more or less changed to the condition of invert sugar, and in many fruits, such as apples, pears, peaches and strawberries, we find a considerable quantity of invert sugar with a smaller quantity of so-called cane sugar. In the grape no cane sugar exists, but all sugar present is in the form of invert sugar. Honey consists of invert sugar. This is partly because the honey bee in gathering sweets from flowers, fruits and other sources, gathers some invert sugar, and partly also because the bee takes cane sugar into its digestive tract and acts upon it by natural ferments within its body, quickly changing it into the condition of invert sugar. Invert sugar is found in the markets as a commercial product of cane sugar, being made from the latter by the action of dilute acid at an elevated temperature. Syrup of this kind possesses advantage for some purposes over plain cane sugar syrup, in that it is less readily crystallized and is perhaps somewhat less readily fermentable in concentrated solutions. Moreover, it is even sweeter than simple cane sugar syrup of the same strength, and in dilute solutions is more quickly fermented by yeast.

Dextrose and Levulose Sugars.

The two sugars which together make invert sugar are commonly known as dextrose, or grape sugar, and levulose or fruit sugar. They derive their names from the properties of acting upon polarized light which they have when in solution in water, the one diverting the rays which pass through it to the right, the other to the left. The effect of the levulose is the stronger and reverses the effect of the cane sugar, which is similar to that of dextrose. Hence the name invert sugar. Aside from this, other distinguishing characteristics of dextrose and levulose are that dextrose is less sweet than levulose, it is less soluble in water and it readily forms crystals when the liquid in which it is contained is dried. It is this latter peculiarity which led to its being called grape sugar. While the two sugars are present in grape juice in almost equal proportions, when the grape loses its water by drying, the dextrose crystallizes and can be separated from the remainder of the grape substance in almost

its pure condition. The levulose dries down as a tough, uncrystallized material. It was for this reason that dextrose was thought to be the characteristic sugar of grapes, levulose having been lost sight of because of its different physical properties. Honey, when allowed to stand for a considerable time in a cool place, often becomes semi-solid through the formation of an abundance of dextrose crystals in the mixture of invert sugar of which it is composed. The only common source of levulose is the so-called cane sugar. That is, it results only from the splitting up of cane sugar. Dextrose is very extensively produced from other sources.

Maltose.

Maltose, or malt sugar, is found extensively in many seeds, especially those of the grass family, which includes plants that produce the important food products, commonly known as grains. As is well known, grains are rich in starch. When wheat, barley, rye, Indian corn or other grain germinates, as it quickly does under the influence of moisture and warmth, the starch is changed more or less rapidly into sugar. This is a physiological necessity because starch is insoluble in water and cannot be used by the young plantlet to build up its plant substance. This change is brought about through the influence of a material called diastase. This special diastase is developed out of the proteid matter in grain at the period of germination, the time when its special work is most required. Other diastase exists in grain at all times but works less energetically and under somewhat different conditions. Diastase cannot act upon the starch in the condition in which the starch is stored in the mature seed, but nature also provides the seed with another enzyme which slowly eats away the surroundings of the starch and exposes the remainder to the action of the diastase.

Malt has long been an article of manufacture and commerce. It is produced by allowing a grain—generally barley—to germinate under conditions which can be kept very carefully controlled, especially as to moisture, temperature and access of air. When germination has progressed sufficiently to develop in the malt a maximum amount of diastase, it is stopped by allowing the grain to dry, and in some instances by drying the grain at an elevated temperature to give it a more or less parched condition. When properly made, malt contains enough diastase to convert all the starch remaining in the grain into sugar. And there is generally enough to change even a much larger quantity of starch.

When the laundry woman wishes to starch clothes she covers the wetted starch with boiling water, and when she does this the starch thickens and undergoes a change which is called gelatinization. The starch is now in such a condition that diastase can readily act upon it to make it into sugar. The diastase of grain germination is able to work at a somewhat elevated temperature; in fact, it will do most of its work at a temperature sufficiently high to gelatinize the starch of the grain in which it is contained. For this reason, the two processes are carried on at the same time. That is, the ground malt is put in water and raised to a temperature of 150 degrees Fahrenheit, so that the

starch gelatinizes and the diastase rapidly changes it into malt sugar. If cooked starch, such as is used in the laundry, is mixed with a quantity of diastase, or with crushed malt containing diastase, the mixture rapidly becomes thinner and takes on a sweet taste. This is because of the change of starch into malt sugar. Malt sugar is distinctly sweet to the taste, but does not crystalize from its solution, so that we do not ordinarily find it in commerce as such. By certain improved methods of manufacture it has, however, recently been made in considerable quantities in a dry, white, powdered condition.

Malt is used extensively in making beer and distilled liquors from grains and was for a long time the only effectual means known of converting grain starch into fermentable sugars. It has also been used by bakers in making yeast for bread, especially before the development of the compressed yeast industry. The liquor resulting from the digestion of malt to produce malt sugar is especially adapted for the growing of yeast, containing besides fermentable sugar other material necessary as a food for yeast. This fact has led to making a syrup from the liquor in which malt has been steeped and the use of this syrup in yeast bread under the name of malt extract.

Malt sugar is not directly fermented by yeast, but yeasts such as are used by the baker, the brewer and the distiller each contain enzymes which split malt sugar into dextrose, just as these same yeasts split cane sugar into invert sugar. In a similar manner maltose is changed to dextrose by heating with dilute acids, just as invert sugar is made from cane sugar for commercial purposes.

Manufacture of Commercial Glucose.

If we were carefully to collect a quantity of the natural juice of the human stomach, to dilute it with an equal volume of pure water, add to it a quantity of starch from grain or potatoes, and then heat the mixture to a temperature somewhat above that of boiling water, which can readily be done by enclosing it in a tightly-stoppered bottle and subjecting it to hot steam, we would in a short time have no starch left, but, formed from it, a mixture of other substances—dextrose, maltose and one or more substances intermediate between starch and maltose and called dextrins. For the gastric juice contains in addition to water a small amount of hydrochloric acid, and it is this latter agent which, together with heat, is most active in changing the starch to this mixture of other carbohydrates. Starch is treated on a large scale in just this way for the making of commercial glucose, except that instead of taking the gastric juice from our stomachs to get the necessary acid liquor, pure hydrochloric acid is added to water to about the acid strength indicated above—that is, about one-tenth of 1 per cent. After treatment, the acid is carefully changed to table salt and the liquid concentrated to a syrup. In this way glucose is manufactured in immense quantities for food purposes and extensively used in syrup form. Similar products are made in the form of solids by evaporating off a greater quantity of the water. If heat is allowed to act for a longer time, all the starch is converted into dextrose—that is, the starch is first changed into dextrins, then into maltose and then into dextrose. A product of this kind, nearly pure dextrose, is extensively sold for use in bread-making, under the name of corn sugar. As is characteristic of dextrose, this product is somewhat less sweet than

cane sugar and will not replace cane sugar for all purposes, but in making bread and for some other purposes it can entirely replace it.

Glucose is used extensively for the table, in making confectionery and for various other purposes, and both the liquid and the solid forms are used a great deal in manufacturing beers and other beverages. The commercial syrup contains 18 to 20 per cent of water, but pound for pound of dry matter, it has food value equal to that of cane sugar. It is a mixture of carbohydrates of such a nature that they can be readily utilized without danger of injury by all human beings (except diabetics), even infants, and as a source of heat, energy and mild sweetness, it is a most wholesome food product.

All flours contain a diastase similar to but not identical with that produced by the germination of the grain. It differs from the malt diastase in that it works readily at a lower temperature. This diastase is continually slowly working in flour made into dough. It also works in connection with another enzyme which breaks off the coating of the starch and allows the diastase to act. This latter enzyme works very slowly, so that there is not a great quantity of sugar produced in the dough during bread-making unless a quantity of gelatinized starch has been added to the flour, in which case sugar-making proceeds rapidly. At least one manufacturer of starch products has developed a dry prepared starch especially suitable for this purpose and of such a nature that it can be readily added to dough in making bread, and will be almost wholly converted into sugars by the diastase present in the flour. Sugar in bread-making can be entirely replaced by this product with most excellent results. The same enzyme will act upon the dextrins in glucose to complete their change into fermentable sugars, and similar diastases of the body act upon it to produce the same results when it is used as a food. In fact, all starch eaten in our foods is taken through this same process by the diastases in the alimentary canal, which eventually convert it into dextrose before it can be assimilated. Cane sugar must also be resolved into its parts before it can be assimilated.

Lactose or Milk Sugar.

Lactose, or milk sugar, is the characteristic sugar found in the milk of all animals. It is less sweet than cane sugar, is less soluble in water, and readily crystalizes. It is not fermented by ordinary yeast but is changed to lactic acid by bacteria, for which reasons milk on standing sours but does not become alcoholic. Milk sugar is present in cow's milk to the extent of about 5 per cent by weight. If the whey left after removing the fat, casein and albumin, as in cheese-making, is sufficiently concentrated by evaporating off the water, the milk sugar will crystalize out. It is extensively used as a food for infants and invalids and in the preparation of medicines. It is too costly to be used for other purposes for which it is otherwise well adapted.

While several other sugars are known and are of much scientific interest, they are of little or no commercial importance.

The nations that can feed their soldiers one day longest are the nations that will win.

How Germany Feeds Prisoners of War

With the advent of American soldiers on the battle line, with their participation in actual fighting, and the resulting lists not only of American casualties but also of American prisoners, the question of Germany's prison-of-war camp policy becomes of new and urgent interest to the people of the United States. Much has been written about prison camps in Germany and it is impossible for any thinking person to take as true without qualification the implications that all Germany's prison camps are as bad as some unquestionably are.

Remarkable for its entire fair-mindedness, for its illuminatingly unbiased judgment, is an article on the diet of prisoners of war in Germany written by Dr. Alonzo Englebert Taylor of Philadelphia, and printed in *The Journal of the American Medical Association* for November 10.

The kernel, as we may call it, of Dr. Taylor's exposition is briefly this:

In the broad sense, one fundamental fact holds for the prison of war as well as for the prison of peace; prison life depends more on the character of the management than on prison laws. Nobility of management will make prison life good in a state with the worst of laws relating to the penal institutions; brutality will make a hell of prison life under the best of laws.

The history of Germany's internment camps falls under three periods—the periods of unorganization, of organization, and of stringency. Underlying these were five German principles:

(a) The possession of prisoners by Germany in greater numbers than those of her subjects in the hands of her enemies gave her a situation of vantage.

(b) The fact of a food blockade relieved her of legal responsibility for the subsistence of the prisoners of war.

(c) The fact that, through the blockade, Germany could not secure manufactured commodities from the neutral world gave her extraordinary rights over the labor of the prisoners of war.

(d) The rules of discipline and control applying to her soldiers under her military law applied to prisoners of war under military rule.

(e) Distinctions between prisoners of war of different nationalities were not recognized; "the Allies who fight together must as prisoners of war sleep together, eat together and work together."

The first of these three periods, the unorganized period, did not end until the close of the fall campaign of 1914. On the eastern front it was further prolonged by the unexpected, tremendous numbers of Slav prisoners taken late in the summer of 1915, but throughout the following year the organization was everywhere perfected and maintained.

Not expecting any material check in her onward rush to Paris, Germany had given little thought to provisions for prisoners of war; consequently the initial housing and feeding conditions were almost intolerable at times. Dr. Taylor says:

Some prisoners have stated to the writer that they regarded the neglect at that time as purely unintentional, due to unorganization; others have the conviction, born of experiences that to them permit of but one interpretation, that malice more than unorganization contributed to the wretchedness of their situation. The writer regrets to feel compelled, from personal observations, to conclude that in some camps and under some commandants, malice was a factor in the regimen. When one considers the number of camps (150 parent camps and thousands of working camps) it is obvious that the chances of getting a brute for a commandant or overseer were not few. In theory, the prisoner of war was supposed to receive the ration of the army of his country, and this was,

with his pay, charged against his country, to be paid at the close of the war.

During the summer of 1916, when Dr. Taylor first came into personal contact with conditions in Germany, the stringency in food supplies became acute, and the ensuing situation he assumes to be about the same as at the present time. The fact that Germany has not even yet officially noticed our declaration of war is no proof that American prisoners will not suffer at her hands as much as any other prisoners, especially if they fall into the hands of the typical Prussian sergeant. For years past stories have been current in Germany of the brutalities of these men raised from the ranks of the common people, towards the university-educated recruits who were for one year only subordinate to their social inferiors. If Germans themselves have suffered under the tyranny of the "rancorous Prussian sergeant," it is not to be expected that prisoners of war will fare any better.

The system for rationing prisoners was, primarily, the contract system, under which caterers took over the entire feeding problem in prison camps. With at first no official diet regulations, and with an allowance of only 15 to 16 cents per day per prisoner, the supposed supervision of the camp commandants did not prevent gross abuses by caterers, as the German authorities themselves frankly admitted. During this first system fairly dependable reports indicate that the food supplied to the camps took no account of national tastes and preferences, was often poorly cooked and sometimes short in quantity. In the spring of 1915 the first attempt was made by the authorities to prescribe a diet, and thus more adequately control the caterers and local authorities.

The first ration provided that the prisoners of war must receive daily 85 gm. (3 ounces) of protein, 40 gm. (1.4 ounces) of fat, and 475 gm. (17 ounces) of carbohydrate, with a total value of 2700 calories. From the standpoint of quantities, this was an entirely adequate diet for sedentary men. When the prisoners worked they received 10 per cent more food. The cost was limited to 16 cents, this compelling the materials to be chosen from among the few foodstuffs that would furnish the denominated units within the set price. Early in the summer of 1915 the housing and subsistence in the prison-of-war camps were organized, and on the customary basis of German minuteness. Under the commandant of the camp operated a committee composed of subsistence officer, surgeon and paymaster. The service of the surgeon was limited to an inspection of the raw materials and stores, and to a daily report on the taste of the mid-day soup. The subsistence officer had the running of the store rooms and kitchens. The paymaster made arrangements for purchase, though this was often purely mechanical, as the central war department made the chief purchases for the prison-of-war camps. The Minister of War appointed a diet expert to exercise supervision over the ration. This was fixed each month for all of the camps, leeway being supposedly allowed to enable the subsistence committee in different camps to take advantage of local markets. If the camp commandant was an efficient man, this arrangement resulted in variety in the diet. (The writer once saw 3 tons of asparagus being cooked for prisoners of war.) More often the opportunity was neglected. In June, 1915, a course of instruction for subsistence officers was held in Berlin under the direct authority of the Minister of War. The course was attended by about one hundred officers detailed from the different camps; for a week they attended lectures and demonstrations on the physiology of the diet, the preparation of food and the technic of mass rationing. Germany had possessed considerable experience in civic kitchens; and on this experience the feeding of the prisoner of war was largely founded.

Instead of appointing as the expert of the Prison

Nutrition Office one of Germany's accepted authorities on nutrition, the Government selected Professor Backhaus, a live-stock expert. The Professor started in to feed prisoners of war by the identical principles which he applied to live stock. He knew nothing of modern investigations on growth or metabolism, the adaptation of diet or the psychology of rationing. In a few camps the recommendation was followed that prisoners should be allowed to do their own cooking as far as possible, and in these instances the situation was materially benefited.

From June, 1915, a monthly regimen was issued from the head office, stipulating the daily food supplies for each camp in grams carried out to the decimal place. As in the first diet list issued, a small degree of adaptation and substitution was permitted, but these must be entered on the reports turned into the central office. From this time on the contract system began to die a natural death, and camp rationing eventually was entirely taken over by the camp authorities.

By March of 1916 students of the food problem in Germany realized that a critical situation was at hand, but it was not until May that the authorities opened their eyes. Consequently the June menu for the prison camps reflected the sudden panic throughout the country, and entailed a 40 per cent reduction in supply. The following comparison shows where the cutting-down took effect.

In June, 1915, a limitation of supplies applicable to all camps was issued by the Department of War. Each prisoner of war was to receive not in excess of 300 gm. (11 ounces) of bread, from 200 to 500 gm. (7 to 17 ounces) of fresh vegetables, and 1,000 gm. (36 ounces) of potatoes on the average daily; and weekly 200 gm. (7.1 ounces) of sugar, 500 gm. (18 ounces) of flour, 100 gm. (3½ ounces) of fat (usually soya oil that lasted until late into the fall of 1915), 200 gm. (7.1 ounces) of field beans, 300 gm. (10.7 ounces) soya beans, 200 gm. (7.1 ounces) of rice, 440 gm. (15 ounces) of fresh meat, 100 gm. (3½ ounces) of sausage made of blood and internal organs, 150 gm. (5 ounces) of dried sea fish, and 200 gm. (7.1 ounces) of herring. No butter was provided and margarine was soon dropped. Since it was the rule to serve the special articles of diet at noon in the form of a thick soup, this left little else but bread and coffee or tea for breakfast and supper. The supper did often contain potato salad or boiled potatoes with herring or sausage, at the beginning; later the suppers approached more and more the compositions of the breakfast. The quality of the foodstuffs was, in the experience of the writer, usually not worse than poor. Naturally the grades were not of the best, but decomposed foodstuffs were not often encountered. The coffee was very poor; at first it was one-third coffee, two-thirds substitute; later it was all substitute. The cocoa was a powder of husks that cost five cents per pound; milk was rarely seen. The sugar carried the tax, as it was expected that the cost of the ration would be repaid at the end of the war. The fresh fish, usually served once a week, was almost always excellent, and this was the dish most looked forward to by the prisoners. The paucity of fat was one of the most grave defects of the diet. Foods low in fats never seem properly cooked. They digest rapidly, and thus hunger appears too soon after a meal, and the sense of having been well fed is destroyed.

The amount of foodstuffs in the diet of the camps was maintained at the set level until June, 1916. In April of that year the ration was normal, containing: protein, 89 gm. (3½ ounces), fat 30 gm. (1.1 ounces), and carbohydrate 510 gm. (18 ounces), with a total of 2,740 calories for a non-working ration. In June the ration for non-working prisoners fell suddenly to 1,720 calories: protein, 57 gm. (2 ounces), fat 21 gm. (¾ ounce), and carbohydrate 310 gm. (11 ounces). The writer has not seen the diet sheets for all of the months since June, 1916, but from those that he has seen, the intake has never since that time risen from 2,000 calories; and the best available information runs to the effect that since our entrance into the war the ration has not exceeded that amount. This quantity of food was, of course, too low to maintain nutrition. It meant loss of weight, subnutrition, lowering

of resistance to infectious and other diseases—in short, starvation for some of the men.

The official German principle of rationing prisoners of war was that to non-working prisoners should be given the same amount of food that non-working German citizens could obtain under blockade conditions. This certainly seems reasonable. It is not to be expected that prisoners should be kept alive at the expense of German citizens. Dr. Taylor is convinced that the principle was in general carried out and that in some of the large industrial centers many people procured no more and no better food than the prisoners of war.

In most camps the soup was served to the prisoners as they stood in line with their bowls. They could then eat in their barracks or out of doors. Spoons were the only eating utensils allowed, through fear that knives and forks could be made into weapons. Consequently the very small meat allowance had to be cooked in the soup, a method which was bitterly resented by the men, who were hungry for the sight, taste and touch of meat.

Germany's principal mistakes in regulating the prison diet were, according to Dr. Taylor, two: disregard of the psychology of rationing and the use of potatoes instead of bread as the staple of the diet.

By the latter mistake the authorities laid up for their own people much suffering that might have been avoided. The application of this same principle to the public food supply resulted in over-emphasis on the production of potatoes and a shortage in the 1915 grain crop. If 300 gm. (10.7 ounces) of flour per day per person had been fixed as the ration, instead of 200 gm. (7.1 ounces), meaning a reduction in the supply of grain fed to stock, but no other difficulty whatever, the situation which resulted throughout Germany would have been very different. As for the prisoners of war, their bread ration was set in June, 1915, at 300 gm. a day, with a flour ration of 500 gm. (18 ounces) issued per week to the kitchens for use in extra bread and cakes. This made a total daily flour and cereal ration of about 270 gm. (9½ ounces). The rice ration of 200 gm. (7.1 ounces) per week was chiefly on paper, as rice became very scarce.

Contrasted with this is the normal British consumption of 310 gm. (11 ounces), and the French and Russian consumption of 400 gm. (14.2 ounces) per day.

Entirely apart from the kind and quality of the bread, the prisoners naturally felt the amount to be entirely insufficient. The digestive tract becomes accustomed to a certain bulk of the staple foods. When other articles in the diet do not suit, the few staples become the mainstay. Many of the dishes of German cooking the French and British could not eat. When, therefore, the bread was low in amount, the deprivation was doubly felt. The same fact held for the entire German people. It did little good to substitute potato, since this disarranged the entire bulk habits of the digestive tract. As a final misfortune, the supply of potatoes gave out early in the spring of 1916, and the prisoners and population together had to go on short rations of potato as well as of bread. In the early months bread was on sale in the canteens; later this was interdicted.

The prison camp bread caused bitter complaints for more than its quantity, however. Later on the bread was more than enough in amount for all the prisoners—such as it was. But of its kind and quality there was at no time any lack of complaint. A coarse mixture of 70 per cent rye and 30 per cent wheat, it was dark, sour, and usually "soggy and gummy inside." It was sour in reaction, as in the sour fermentation method used in central and eastern Europe, not neces-

sarily as indigestible as its appearance implied, but revolting in the way it looked and the way it tasted. As Dr. Taylor says:

It is a matter of taste. The German prisoners of war in England used to complain of the constant use of white bread. The Russians made no complaint against the bread except that the ration was low. When in the fall of 1915 potato was added to the bread, matters only became worse. When the writer visited the camps in the spring of 1916, the bread contained as much as 30 per cent of potato. In some of the camps relatively good bread was baked; in many of the camps nothing approaching good bread could be produced. In Parchim, where the commandant was ceaselessly busy doing his best to improve conditions for the men in his camp, the making of bread had been evolved to such an art that the 30 per cent of potato was entirely concealed, and the bread tasted like a common whole-grain bread of coarse texture. In the final analysis it was a matter of endeavor; where conscientious effort was expended on the problem, results were secured; where the complaints against the bread were lightly disregarded, conditions remained bad. At the best it was a low grade bread, difficult of digestion.

Up to the June, 1916, period each camp had a canteen where food and other articles could be purchased, but the authorities were eventually forced to abolish these.

In the working camps rations were usually much superior to those in the parent camps. In most cases employers realized that adequate nourishment was a far more effective method of getting work out of the men than terrorism. However:

Generosity in the matter of diet could hardly be expected when the standards of work by which the men were judged were such that in one instance the official time-card of a group of men engaged in cultivation of virgin moorland credited the men with work equaling the value for the day 2½ cents. Ten cents per day was a common rate of payment. The men billeted on farms fared the best. Here the lack of long-standing racial hatred between German and English came to the good of the Tommy. After being billeted on a farm for a few months, the Tommies and the families of the peasants apparently forgot that their countries were at war, so far as their personal relations were concerned. The Tommies developed a sort of pigeon German and lived in amity with their employers. Very often the prisoners would share with the simple peasants their delicacies from England in exchange for the butter and eggs that the food controller was vainly trying to extract from the country districts for the benefit of the industrial cities. The French and Belgian prisoners did not fare so well. The French never dropped the hauteur and distance of an ancient racial antipathy. The Belgian never lost the immediate sense of resentment at the sufferings of his innocent people. The Russians had few difficulties, because the peasants were accustomed to Russian agricultural labor in prewar days. Work is the salvation of the prisoner of war. If all the prisoners could be employed in agricultural labor, that would be the best solution of the prison camp problem.

In disregarding the psychology of diet Germany made her second big mistake. The bitter feeling as the war was prolonged, expressed in the sentiment:

"They are allies, they fight together; therefore they live together, sleep together, eat together; no discrimination; the same for everybody."

showed itself in the crowding together of all nationalities with a lack of consideration for racial habits (for instance, the British wanting windows open at night, the Russians fearing to have them open) that resulted in serious epidemics of disease that might easily have been avoided had the commandants followed the advice of their surgeons and segregated the Russians from the rest. This same spirit caused all the food to be cooked up in one way, probably the easiest way. Here the Russian had the advantage, as the sole problem in feeding a Russian is to fill him up. The Belgian with his hatred for anything German, the Frenchman used to highly seasoned dishes and sauces and plenty of white bread, the British demanding beef,

cabbage and potato, unseasoned, were hard put to it by prison camp conditions. The logical and reasonable solution for the problem was for each nationality to be permitted to prepare and cook its own food supplies, as has been done in England's prison camps.

The Germans refused to accept this solution, at first because the caterers would have suffered in their pocketbooks and so did not permit it, and later because the commandants refused to allow any distinction of nationalities, for the reason already explained. Later on the size of the camps, with always a great predominance of Russians, and the fear lest the prisoners, if given raw materials, would cook only what they liked and throw the rest away, were more adequate reasons for refusing to segregate the barracks or kitchens of different nationalities.

The psychology of a diet is made up largely of externalities that, on paper and in fact, are much less important than protein, fat, carbohydrates, vitamins, salt and roughage. But as a matter of experience, taste, palatability and the normal appearance and consistency of the foods are of great importance. The Germans had had long experience with civic kitchens, and citations enough can be made from German writings warning against the effects of monotonous soup rations that lack all individuality as dishes. These externalities of diet are important to the normal individual. They are still more important to the abnormal individual, as may be seen in the daily experience in the sickroom. Now the truth is, the prisoner of war does not long remain normal. The crisis of battle, the terror of capture, the transition of circumstances of living, the depression of patriotism, the gloating of the captor, the abnegation of defeat, the homesickness that becomes a positive nostalgia, the insomnia—these all combine to produce reactions in the nervous system that easily lead to perversions in the physiologic functions. When finally is added to this a diet that does not please and idleness, mental and physical, the average prisoner of war, no matter in what land, lives on the verge of the abnormal. Under these circumstances, the externalities of the diet assume and finally possess an increased importance. The constant row about the preparation of the food kept many of the camps in perpetual uproar. Fault there was on the part of the prisoners of war, in that they sometimes made absurd and exaggerated complaints. But the primary and responsible fault lay with the camp authorities, in failing to recognize how serious would be the results of a constant forcing of an unsatisfactory diet. In particular the constant eating of thick soups gets on the nerves. They looked like swill, they left nothing to mastication, and with this manner of cooking the best tastes of the ingredients were not developed; indeed, the particular tastes of the ingredients were lost. German experts in dietetics knew all this, of course. In one of the official publications dealing with the diet of the German camps, attention was drawn to the fact that constant use of soups as the chief dish caused illness in some individuals. And when they began civic feeding on a large scale last summer, loud and numerous were the warnings to the authorities not to repeat the very faults that had been committed in the prison camp. But the German experts in human nutrition had nothing or little to do with the prison-of-war fare. That was being done on the basis of the model stock farm: the men were dieted precisely like domesticated animals. At the time of highest prices of food in the summer of 1916, Professor Backhaus stated to the writer, "I can feed men brilliantly on 12 cents per day." The cost of our army ration is 42 cents. Even the Russians finally turned against the soup diet.

Wise commandants took a different position, and allowed freedom in the preparation of food. The writer has visited camps where the different nationalities were cooking their food in their own way, with satisfaction and without friction, also without losses to the commissary. It was for the most part merely a matter of consideration versus ruthlessness.

If Americans are taken prisoners and sent to Parchim, Saltau, Friedrichsfelde or Wahn, they will wonder on what the printed stories of the harsh treatment of prisoners of war are based. But if they are taken to Lemberg, Minden, Langensalza or Schneidemühl, they will find it out for themselves in an unfortunately short time, unless these camps have suffered change of commandants.

The inadequacy in amount and quality of the diet

was from the first partially remedied for the British and French by their receiving supplies from home, the British almost the entire amount of their needs, and the French over one-half. Thus it was the Russians and Serbs who were chiefly affected by camp conditions. International war agreements provide that prisoners of war may receive from home parcels of clothes, food and various other things, and the Tommies soon took full advantage of this provision, receiving from England full ration packages. Except when fish or potatoes boiled in their skins were served, the British prisoners subsisted entirely on these supplies, and their share of the camp provisions was, in good camps, delivered to them and by them turned over to the Russians, and in bad camps served directly to the latter. The Belgians and French eked out their more slender parcels with portions of the camp food that were least distasteful.

By the autumn of 1916 the hit-or-miss method of supplying these parcels to English prisoners was superseded by the creation of a central committee in London. The ration selected was one which would pass censorship without difficulty, transport easily, keep well, and suit the tastes of the recipient. Soap and tobacco, being scarce in Germany, were included, and bread was baked in Berne and supplied by a committee of women under Lady Grant-Duff, the wife of the then minister to Switzerland.

Shipments to French prisoners have decreased lately, because of food conditions in France, and the American Red Cross has taken up the work of supplying them in the hope of warding off tuberculosis epidemics which are all too likely to result from a ration decreased even slightly below the previous ration.

In June, 1916, as Germany felt the first tightening pinch of the food blockade on her supplies, letters of protest from Germans flooded the authorities and a strong move was made to force the hand of the Government and check the influx of food parcels. However, fear of reprisal towards German prisoners in Russia, who were being sent food through the American Y. M. C. A., and the vigorous and uncompromising opposition of Ambassador Gerard, eventually secured the reaffirmation of the position taken by the Chancellor and the Foreign Office against the military party, and the number and size of the food parcels was allowed to continue unlimited. Ambassador Gerard even secured a further concession, permission for shipping in food in bulk, under the name of the American ambassador but for distribution to the civilian Englishmen in Ruhleben who had no friends sending food from England and were therefore particularly affected by the reduced camp ration.

It is only just to point out that although the influx of these food parcels into Germany was not only tantalizing to her own poorly-nourished citizens, but also a source of unending burden and difficulty to the authorities, yet, so far as Dr. Taylor could find from those in charge or from the prisoners themselves, the parcels were never in any instance appropriated by the Germans. Some of Germany's difficulties may be gathered from the following:

Delivery was often delayed, especially in working-camps. The packages had to pass the Censor, outgoing as well as incoming, and this often consumed time. The necessity of censorship can be understood from the statement that on a number of occasions a suit of clothes was removed from a hollowed-out loaf of bread. The shipment of these food supplies packed as individual parcels imposed a serious burden on the German transportation system. Sometimes 50,000 packages a

month would be delivered to a camp, and a great many express trains were kept in operation by the parcel shipments to the camps. This led to difficulties between the transportation authorities and the Censor's office, since the shipments could have been greatly expedited if the rules of censorship had been less strict. All in all, the food parcels were as much a source of discomfort to the Germans as they were of sustenance to the Tommies.

But the Tommies themselves had troubles over the food parcels. In bad camps no facilities for cooking their contents were supplied or permitted. In some bad camps prisoners were not allowed to give food to prisoners of another nationality—for no other apparent reason than petty spite.

The system of rationing officers in German prison-of-war camps is entirely different. As in their own armies on active service, these officers run their own mess, the cost of which is charged against them or their country. In general they had a good deal of freedom in regard to rations, and could always import any food they wanted. The instinct of the German was to treat officers well, as being of the military caste which in Germany holds so distinguished a social position.

The following tables show two contrasting weekly diet sheets in German prison-of-war camps:

TABLE 1.—WEEKLY DIET SHEET TYPICAL OF PERIOD PRIOR TO STRINGENCY IN FOOLSTUFFS.*

	Gm.	Ozs.		Gm.	Ozs.
Bread	2,100	75	Sugar	200	7.1
Flour	270	9.6	Legumes	150	5.3
Meat	300	10.7	Fat	70	2.5
Fish	300	10.7	Maise grease..	180	6.4
Herring	150	5.3	Pearl barley....	100	3.5
Potatoes	9,000	321.0	Dried fruit....	50	1.8
Vegetables	1,800	65.0	Marmalade	100	3.5
Skim milk.....	400	14.0	Tea	16	0.5
Sausage	200	7.0	Spices, herbs....	30	11.1
Cheese	100	3.5	Cocoa	40	1.4
Nutrient yeast..	40	1.4			

*Per diem: protein, 89 gm.; fat, 30 gm.; carbohydrate, 510 gm.; calories, 2,740.

TABLE 2.—WEEKLY DIET SHEET TYPICAL OF PERIOD OF STRINGENCY IN FOOLSTUFFS.*

	Gm.	Ozs.		Gm.	Ozs.
Bread	2,100	75	Fat	65	2.3
Flour	50	1.7	Maise grease...	100	3.5
Meat	200	7.0	Pearl barley....	60	2.1
Sausage	200	7.0	Fruit	300	10.7
Fish	325	11.0	Marmalade	100	3.5
Potatoes	3,500	125.0	Tea	4	0.15
Vegetables	1,650	59.0	Coffee	6	0.21
Skim milk.....	500	17.0	Chicory	15	0.5
Cheese	100	3.5	Cocoa	40	1.5
Nutrient yeast..	20	0.7	Spices and herbs	20	0.7
Sugar	130	4.8	Mustard	50	1.7
Legumes	150	5.3			

*Per diem: protein, 57 gm.; fat, 21 gm.; carbohydrate, 310 gm.; calories, 1,720.

These figures will convince any American that we, through our government, must expect to see to the feeding of American prisoners of war in German prison camps. And the United States Government has already set in motion the machinery for undertaking this. Through Berne and Copenhagen parcels of food may be sent into Germany for American prisoners, and receipts afford a guaranty that they reach their destination. Dr. Taylor suggests that if food conditions become too terrible in Germany the Government may be forced to rob the prisoners, and that in such a case our only recourse would be reprisals on German prisoners—an outcome perhaps more dreadful than anything yet evolved from this most terrible of wars.

An Important Food Decision

By THE EDITOR

THE injunction case involving the sale in Ohio of the product known as "Hebe" has recently been decided in the Federal District Court at Columbus. The product involved is a compound of evaporated skimmed milk and vegetable fat and was labeled as follows:



Over a year ago the Ohio food officials took the position that under certain provisions of the food law of that state the sale of this product was absolutely prohibited. Prior to that time, however, former food officials of Ohio had approved the product and its labeling and had permitted its sale in Ohio. The manufacturers of Hebe, upon being notified by the food officials that unless further sales of their product in Ohio were discontinued prosecutions would follow, immediately filed a bill for injunction in the Federal District Court at Columbus.

The points raised by the plaintiffs as a reason for injunction were that the food officials of Ohio were misconstruing the Ohio law and that it did not apply to the sale of such a product labeled in the manner in which this product was labeled. They also took the position that if the Ohio law could be construed as prohibiting the sale of this product labeled in the manner in which it was labeled, the Ohio law was unconstitutional and void because it prohibited the sale of a wholesome article of food consisting of a compound of two wholesome articles, namely, evaporated skimmed milk and vegetable fat, properly labeled to show that fact; also, that there was involved no question of artificial coloring and that nothing had been done with the product in any way to render it capable of being used for fraudulent purposes, the product as stated being simply a compound of the two articles of food mentioned, both being present in proper proportions, relatively speaking, the uses for which the article was intended being considered.

Upon filing the bill for injunction the case was argued before three United States judges—Warrington, Sater and Hollister. An interlocutory injunction was asked for, but no decision was rendered at that time, and later, at the suggestion of the Court, it was decided to introduce testimony and submit the case to the Court for decision on a final hearing. This hearing was had during the summer of 1917.

The Court held that Hebe is recognized by the U. S. Bureau of Chemistry as a compound of evaporated

skimmed milk and cocoanut oil highly refined and of good quality, which in its properties more nearly resembles butter fat than any other known substance, the two ingredients being brought together by a secret process in such a manner that they remain properly combined until the product is ready for consumption.

The Court also held that there was no claim that the product, or either of its ingredients, is impure or unwholesome.

The Court, among other things, said:

"The article is produced in and shipped from Wisconsin by the plaintiffs to jobbers in various states, including Ohio, on orders accepted in the State of Washington, and reaches consumers through retailers who purchase of such jobbers. It is transported in cans which are packed in enclosing, sealed, fibre shipping cases, completely concealing the cans and their labels, each case containing either 48 cans of one pound each or 96 cans of six ounces each. When shipped in carload lots the shipping cases bear only the name of the consignee and other data appropriate for identification and delivery. When such cases are received by the retailer, he removes the cans and exposes them for sale to his customers. The plaintiffs' position is that their food product, being plainly and fairly labeled in a conspicuous manner, is not within the condemnation of the Ohio statute and may be lawfully sold and offered for sale in such state. It is further claimed that if the Ohio statute, correctly construed, prohibits the sale of Hebe, a compound composed of two well-known articles of food, each of which is pure, wholesome and nutritious, it is in that event violative of the Fourteenth Amendment of the Federal Constitution in that (a) it deprives the plaintiffs of liberty and property without due process of law and also denies them the equal protection of the law; (b) it does not regulate the sale of 'Hebe,' but arbitrarily, unjustly, unduly and in a confiscatory manner discriminates against it and prohibits its distribution and sale, although such article is so conspicuously and correctly labeled as to show its true character, and, although the statute permits the sale of uncondensed skimmed milk, if it be labeled skimmed milk; (c) by its denial of the right to sell 'Hebe' in individual tin cans, which cans are labeled as required by the National Food and Drugs Act and are 'original packages' insofar as that act is concerned, it conflicts with such act and the regulations made in accordance with it and unlawfully interferes with the interstate commerce laws of the United States."

The Court enumerated a number of sections of the Ohio food law which deal with adulterations and misbranding of food and referred to one section which specifically permits the sale of skimmed milk if such milk is conspicuously labeled "skimmed milk." The court set out Section 12,725 of the Ohio code as the section applicable to the case:

"Whoever manufactures, sells, exchanges, exposes or offers for sale or exchange, condensed milk unless it has been made from pure, clean, fresh, healthy, unadulterated and wholesome milk, from which the cream has not been removed and in which the proportion of milk solid shall be the equivalent of 12 per cent of milk solids in crude milk, 25 per cent of such solids being fat, and unless the package, can or vessel containing it is distinctly labeled, stamped or marked with its true name, brand, and by whom and under what name made, shall be fined not less than \$50 nor more than \$200, and, for each subsequent offense, shall be fined not less than \$100 nor more than \$500 and imprisoned not less than 10 days nor more than 90 days."

The plaintiffs contended that the foregoing section does not apply to the sale of a product like Hebe, properly labeled in the manner in which Hebe is labeled, but the Court held that under the foregoing section the sale of the product Hebe in Ohio is abso-

lutely prohibited. This decision was reached regardless of the fact that the product is admittedly fairly and conspicuously labeled; is always sold in cans admittedly properly labeled; is admittedly pure and wholesome in every respect; is admittedly free from artificial coloring of any kind; and may be legally shipped in interstate commerce under the Food and Drugs Act.

When considering the constitutional points involved, the Court held that it was entirely within the power of the state legislature to pass such a law, and that it was a valid law and did not in any way violate any of the plaintiffs' constitutional rights, basing its decision upon the case of *Powell v. Pennsylvania*, 127 U. S. 678, and other cases of similar import.

The Court considered the case of *McDermott v. Wisconsin*, 228 U. S. 115, cited by plaintiffs in support of their interstate commerce rights with respect to the sale of their product in Ohio, but held that case to be not applicable, saying:

"It is claimed that the teachings of that case are that the protection accorded to articles of interstate commerce by the Federal Constitution extends to the sale in Ohio by wholesale and retail dealers in plaintiffs' goods in the original packages, i. e., the labeled tin containers, notwithstanding the Ohio statute under consideration. The Wisconsin act was in direct conflict with the federal act which covers the field, as regards the labeling of articles of food which are transported in interstate commerce, and leaves nothing on which a state law touching labels can operate. The object of the federal act is to prevent the misuse of the facilities of interstate commerce in convey-

ing to and placing before the consumer misbranded and adulterated articles of medicine or food; and, in order that its protection may be afforded to those who are intended to receive its benefits, the brands or labels, the regulation of which is within the power of Congress, it was properly held, must be upon the package intended to reach the purchaser. But it was also expressly stated that it by no means follows that the state is not permitted to make regulations with a view to the protection of its people against fraud or imposition by impure food or drugs."

The Court thereupon decided that a decree might be entered dismissing the bill of complaint.

The case is considered one of the most important food cases ever brought in the courts of the United States and the principles of law involved are far reaching indeed. It is easy to see this when it is considered that the point involved is whether or not it is within the power of a state legislature absolutely to prohibit the sale of a pure, wholesome and nutritious article of food properly labeled as such, no question of artificial coloring being involved. The right of a state to regulate the sale of such a product is not in question as the statute involved, as construed by the court, is not a regulatory statute, but is absolutely prohibitive of the sale of the product.

The manufacturers of the product are arranging to appeal this case immediately to the Supreme Court of the United States, and it is said that on account of the great importance of the issue involved it is likely that the best legal talent in the country will be retained to present the case to the Supreme Court.

Pennsylvania Cold Storage Limits Set Aside by Federal Law

Federal regulations under the Food Control law supersede various state laws regulating the length of cold storage of foods.

The decision on this important issue was recently given by the acting chief counsel of the United States Food Administration to the effect that the law of the State of Pennsylvania insofar as it prohibits the sale in that state of eggs held more than eight months in cold storage, has been suspended and superseded by the regulations issued by the United States Food Administration and it is presumed the same logic will apply elsewhere.

The decision is contained in a letter from the acting chief counsel to Howard Heinz, federal food administrator for Pennsylvania, in response to an inquiry as to the standing of the Pennsylvania statute, and reads in substance as follows:

"In my opinion the Food Control Act supersedes and suspends the Pennsylvania statute insofar as that statute affects the sale of eggs from cold storage where the storage has been in compliance with all the rules and regulations issued in pursuance of the Food Control Act.

"By reason of the existence of a state of war it is declared clearly established that Congress may use any means necessary and appropriate to carry the war to a successful termination, and it follows from this proposition that all laws passed by Congress, in pursuance of its supreme power, override and supersede all state laws which obstruct the execution of such acts of Congress.

"Under the federal law the President has licensed

the storage and distribution of eggs and issued regulations in control of such storage and distribution, among which is one providing that licensees must keep food commodities moving to the consumer in as direct a line as practicable and without unreasonable delay. This rule is in direct conflict with the shipment of Pennsylvania eggs out of the state, after eight months' holding, when they are needed and can be utilized with less delay and by shorter shipment within the state. The Pennsylvania law therefore frustrates one natural effect of the national law.

"Rule 11 provides that the licensee shall not knowingly commit waste or permit preventable deterioration, and it is declared that a statute which prohibits within a state the sale of eggs now stored there in good condition will, if enforced, compel waste and preventable deterioration—a direct conflict between the two laws.

"Rule 13 prohibits holding food products in excess of the reasonable requirements of the licensee for 60 days, but provides that this shall not prevent the licensee from storing in sufficient quantities to fill his reasonable requirements throughout the period of scant production commodities, including eggs. The purpose is plain to permit the storage of eggs in sufficient quantity to last throughout the period of scant production, and any interference with this frustrates the natural effect of the entire scheme."

Administrator Heinz will be governed by the ruling of the legal department of the Administration, and State Food Commissioner Foust, it is to be assumed, will make no attempt to oppose the decision of the Food Administration.

Ten Years of the Food and Drugs Act.

Ten years of enforcement of the Food and Drugs Act of June 30, 1906, are reviewed in the current annual report of the Bureau of Chemistry, United States Department of Agriculture, which says that the Act's chief contributions to the safety of the people's health have been its corrective effect upon the drug and patent medicine industry, its control of trade in unclean milk, polluted, decomposed or filthy foods, and protection of foodstuffs from contamination with poisons likely to be met in manufacture.

The general effect of the Food and Drugs Act may best be estimated, says the report, by considering its effect upon food and drug control by the states, and upon development of the food and drug industries, and by the principal abuses that have been corrected. But to illustrate the scope of the work through figures and facts the report points out that more than 6,000 prosecutions have been terminated in the courts in the first decade of the Act; that manufacturers have been cited at hearings more than 40,000 times, that many thousands of factory inspections have been made, and that more than 750,000 shipments of domestic or imported food and drugs have been examined.

Special attention is given to shipments of polluted or spoiled food. Milk shipped in interstate commerce and imported from Canada has been improved in cleanliness, purity, and the condition of sanitation under which produced. The canning of decomposed navy beans has been largely suppressed. Interstate shipment of oysters from polluted waters has practically ceased. Because of co-operation with state municipal officials in controlling the shipment of bad eggs, it is reported that the quality of eggs reaching the large cities is much improved. Other products in whose handling and sale improvement has been noted include mineral water, tomato products, fruit, vinegar and gelatin.

States Co-operate with Federal Laws.

One consequence of the enactment of the Food and Drugs Act was to encourage similar legislation in many of the states, the purpose of which is to control local traffic in food and drugs which, since no interstate commerce is involved, are not subject to the federal law. For example, in 1906, many states had no feeding stuffs law. A state could not prosecute a manufacturer unless he were a citizen of that state. The federal law supplements the state law in this respect and now most of the states have similar laws.

In the beginning the confusion and apparent conflict between local and federal laws and administration of laws not only made it difficult for the two sets of officials to co-operate, but often forced manufacturers to make special preparations for shipment to certain states at extra cost, this extra cost being passed on to the ultimate consumer. This evil has been remedied to a considerable extent by the organization of two agencies which in a large measure have removed some of the difficulties arising from the conflict of federal and state jurisdiction. These agencies are: (1) the Joint Committee on Definitions and Standards, and (2) the Office of Co-operative State and Federal Food and Drug Control.

Development in Food and Drug Industries.

The Food and Drugs Act was one of the first laws which today would be classed as laws for the prevention of unfair competition. The report says that the suppression of fraud upon the consumer and of unfair competition among business rivals are "but the two faces of the same coin." In consequence the food industries are sincerely and actively helping the Bureau of Chemistry to enforce the law.

Frequently, the report says, the Bureau is appealed to by industries to compel the cessation of unfair practices and to encourage the standardization of products, when the industry is incapable by itself of bringing about these results. The Act is described as one of the influences which have helped to draw competitors together into associations like the guilds of the middle ages, although the modern associations lack the special privileges which the ancient guilds often enjoyed.

Some of the associations, understanding the value of constructive work, now devote considerable money to experi-

mental research into technical problems. Thus is made available to the small manufacturer scientific assistance ordinarily beyond his reach: since the Bureau of Chemistry always has regarded it as its duty not merely to report violations of the law but also to prevent accidental violations, through constructive work tending to improve methods of manufacture, it co-operates actively with such associations of manufacturers. Such co-operation, by the various government agencies, says the report, is bound to exert the profoundest influence on the country's industrial and social development.

Abuses Corrected by Law.

The best evidence, according to the report, that many of the abuses formerly occurring in the food industry have ceased is found in the fact that the violations of the Food and Drugs Act observed today are hardly comparable, in degree, with those in the first few years following the enactment of the law.

Most of the staple-food products now found in violation either are of a higher grade than formerly or are products of clever adulterators who have more or less anticipated detection so that the adulterations have been found only by the most painstaking chemical analyses and factory inspection.

Consequently there has been a decided change in the direction of the work. In recent years it has developed quite noticeably in the direction of factory sanitation, the study of spoilage and decomposition of foodstuffs, and improvement through laboratory research of methods of detecting the more refined types of adulteration.

British Conservation of Waste Fats from Material Collected at Camps.

Among the various British schemes for the conservation of waste material is that for the collection and disposal of all waste fats and bones at camps in Great Britain and France. In response to the request of the U. S. Consulate General for information concerning the various schemes, the British committee on the purchase of army camp refuse wrote as follows:

On its inception the Committee allocated the whole of the United Kingdom to certain approved buyers, each of which took a district adjacent to their works. An army council order was then issued instructing all units to apply to the Committee for directions as to the disposal of kitchen by-products. Rapid headway was made, and in the first month £7,500 was returned to units. This amount was doubled the second month and trebled in the third, and has made progress month by month until over £80,000 per month is now paid to the units for material that was hitherto wasted.

The commodities dealt in are kitchen by-products, viz, drippings, bones, butchers' fat and greases, all of which are of paramount importance for the production of soap, candles, and fertilizers, and all, of course, are glycerin-producing materials. With the much-restricted imports of foreign and colonial tallow, the great scarcity of fats and oils has long been experienced in this country, and the material collected under the auspices of this Committee have been sufficient to provide the whole of the requirements of soap for the Navy, Army, asylums, work-houses, and other institutions and leaves a very substantial balance for public use.

The glycerin produced from the commodities is sufficient at the present time to provide the propellant for 17,000,000 shells per annum. The prices are fixed monthly and all units advised of same. The army council are represented on the Committee. Publicity takes the form of charts, memoranda, etc., which are posted up in the naval and army cookhouses.

The scheme has been extended to the naval forces, even units of the grand fleet; also to the troops overseas.

RETAIL PRICES,

Average Price per Pound	Average Price per 100 Calories		Lima, Ohio	Concord, N. H.	Boston, Mass.	Cambridge, Mass.	Providence, R. I.	Newark, Del.	New York, N. Y.	Trenton, N. J.	Phila- delphia, Pa.	Washing- ton, D. C.	Richmond, Va.	Lynchburg, Va.	Atlanta, Ga.
CEREAL PRODUCTS															
6.4	.39	Wheat Flour, No. 1, Pat., 49 lb. bag.....	320	350	345	367	347	360	340	350	365	300	330	330	220
7.1	.45	Rye Flour, Std., 24½ lb. bag.....	175	175	175	171	185	.....	190	200	210	172	175	175	.....
7.9	.48	Graham Flour, 10 lb. bag.....	75	75	69½	70	90	.....	80	94	85	80	65	100	75
18.5	1.11	Shredded Wheat, 12 oz.....	15	15	12	14	13	14	13	12	12	11	15	15	12
13.7	.84	Cream of Wheat, 1 lb. 12 oz.....	25	25	22½	24	22	25	20	22	25	22	25	25	25
9.8	.54	Quaker Oats, 1 lb. 4 oz.....	12	12	10	11	12	12	10	10	12	9	10	12	12
8.1	.45	Rolled Oats, Bulk, lb.....	10	9	7	7	8	7	7	6½	8	6	9	10	15
11.8	.74	Rice, Fancy Head, lb.....	12½	13	12	12	10	12	10	12	14	10	12	15	11
23.7	1.45	Kellogg's Tstd. Corn Flakes, 8 oz.....	12	12	11	11	12	12	11	10	12	9	12	12	12
6.7	.41	Corn Meal, lb.....	7	8	7	7	8	6½	8	7	7	6	.....	6	4
9.0	.56	Hominy Grits, lb.....	10	10	8	8	.....	.....	8	9	9	7	.....	15	7
11.1	.68	Pearled Barley, lb.....	10	15	8½	8	10	.....	8	8	10	9	12	15	.....
9.2	.78	Bread, lb.....	10	10	.....	9	8	9	8	8	8	8	10	10	10
18.2	.97	Crackers, Bulk, Soda, lb.....	20	20	16½	20½	16	18	18	22	20	14	15	20	.....
26.2	1.39	Uneda Biscuit, 4½ oz.....	8	8	7	12	7	8	7	7	8	6	7	8	8
13.8	.85	Macaroni, Bulk, lb.....	15	15	12	13	15	15	10	12½	25	15	15	15	20
11.3	.69	Corn Starch, lb.....	12½	12	9½	10	10	12	8	10	10	9	.....	10	.....
SUGAR AND SYRUP															
9.5	.52	Granulated, lb.....	9	10	9½	10	10	11	9	10	9½	9½	10	11	10
8.5	.59	Corn Syrup, 10 lb. pail.....	80	.....	75	.....	.....	90	90	85	.....	75	85	90	85
25.5	1.72	Comb Honey, lb.....	22	40	21	.....	30	25	25	30	30	25	25	15	33
FATS															
49.4	2.08	Bacon, Sliced, lb.....	57½	50	50	46	45	50	45	48	48	55	47	50	48
56.1	1.61	Creamery Butter, Fancy, lb.....	60	60	51½	49	48½	55	57	58	65	60	60	60	54
33.2	.81	Pure Leaf Lard, lb.....	35	35	43	34	32	35	34	32	31	30	35	35	30
33.8	.99	Oleomargarine, Uncolored, lb.....	34	35	31	35	30½	30	30	35	34	29	35	35	34
62.3	1.56	Italian or Spanish Olive Oil, qt. tin.....	115	125	.....	99½	110	.....	114	115	95	95	100	135	.....
31.9	.80	Cottonseed Oil, qt. tin.....	75	75	52	65	65	.....	30	45	.....	38	65	90	38
33.4	.84	Corn Oil, qt. tin.....	65	.....	60	58	55	.....	60	45	.....	.....	35	.....	.....
25.3	.92	Peanut Butter, lb.....	25	25	25	24	25	.....	30	22	22	20	30	35	.....
FRUITS															
18.9	1.43	Evaporated Apples, lb.....	20	30	30	22	.....	18	20	25	18	17	20	15	16
16.8	1.40	Evaporated Peaches, lb.....	20	20	17	15	28	15	18	15	18	14	15	18	17
13.5	6.43	Peaches, Canned, No. 2½ Std., 1 lb. 13 oz.	30	30	26	28	20	30	20	25	28	18	20	30	32
14.3	2.04	Pineapples, Cnd., No. 2½ Std., 1 lb. 14 oz.	27½	30	26	29	20	25	25	30	25	22	35	30	25
15.4	.99	Raisins, Seeded, per pkg., 15 oz.....	15	15	14	12	14½	13	14	14	16	15	15	15	14
16.8	1.45	Prunes, Medium Sized, lb.....	18	15	23½	14	16	15	16	15	18	10	20	18	17
VEGETABLES															
3.1	1.03	White Potatoes, lb.....	3	3½	3½	3½	3⅓	3	3⅓	2⅓	3	3	4	3⅓	3
6.3	1.40	Sweet Potatoes, lb.....	10	8	7½	6¼	7½	2⅔	5½	5	5	6	4	4	3
4.8	2.40	Onions, lb.....	6	6	6	6	5	4	6	4	3½	4½	9	7	5
18.4	1.16	Lima Beans, dry, lb.....	23	20	18	20	18	19	16	19	20	17	20	15	19
18.4	1.17	Navy Beans, dry, lb.....	20	18	17½	19	17½	12	17	19	19	17	18	18	19
14.3	15.38	String Beans, Cnd., No. 2, Std., 1 lb. 3 oz.	15	20	18½	20	15	18	13	20	18	10	15	18	20
12.9	2.93	Corn, Canned, No. 2, Std., 1 lb. 4 oz.....	13	20	16	18	16½	18	16	18	20	15	15	15	17
12.9	5.16	Peas, Canned, No. 2, Std., 1 lb. 4 oz.....	15	18	18	18	16½	18	14	15	20	11	15	18	20
15.6	.97	Split Peas, lb.....	.....	15	.....	13	13½	.....	.....	17	.....	14	18	25	15
18.3	.98	Peanuts, Unshelled, lb.....	.....	15	16	27	.....	13	13½	20	18	.....	20	.....	.....
8.9	8.90	Tomatoes, Cnd., No. 3, Std., 2 lb. 1 oz..	18	25	19	20	18	.....	18	20	22½	12½	17	15	20
4.3	3.58	Cabbage, lb.....	5	5	3	6	3½	6	6	3	4	4	6	4	6
5.7	3.35	Beets, lb.....	3	5	5½	.....	4½	7	4	.....	4	.....	.....	6	.....
3.5	1.94	Turnips, lb.....	4	5	3	2½	2½	4	3	3	2	.....	.....	6	4
MISCELLANEOUS															
33.5	1.49	Cocoa, Bulk, lb.....	30	35	41	25	29	50	20	.....	30	25	30	40	40
43.6	7.27	Eggs, fresh gathered, firsts, doz.....	60	75	82½	80	85	80	70	70	72½	75	65	60	65
5.9	1.90	Milk, qt.....	12	12	.....	11	13	12	12	14	14	14	14	12	20
34.2	1.64	Cheese, American, Cheddar, lb.....	40	32	30½	.....	30½	32	35	32	35	28	34	35	32
MEATS AND FISH															
29.3	4.51	Beef Round Steak, lb.....	32	40	45	32½	35	35	35	35	37½	35	30	25	25
36.9	7.38	Veal Cutlets, lb.....	30	45	50	45	47½	45	40	40	42½	50	40	35	25
28.8	3.31	Leg of Mutton, lb.....	32	30	28	.....	23½	45	23½	.....	32	32	35	35	25
33.1	3.94	Leg of Lamb, lb.....	40	30	33½	30½	31	45	33½	35	35	35	40	40	30
33.1	2.69	Pork Chops, lb.....	33½	35	36½	32½	30	35	40	32½	38	38	38	30	30
45.3	2.38	Ham, Sliced, med. fat, lb.....	50	45	47½	47½	47½	38	50	45	45	50	45	42	40
37.4	12.89	Chickens, Broilers, lb.....	35	41½	38½	37	35	35	42½	40	45	50	38	40	36
23.5	6.53	Salt Cod, lb.....	25	27	24	18	18½	16	26	20	25	18	20	25	35
23.1	2.31	Salt Mackerel, lb.....	25	25	30	32½	20	16	30	25	25	20	25	20	30
31.8	7.07	Halibut, lb.....	35	35	35	35	32	.....	35	.....	40	45	40	30	30
25.4	7.94	Whitefish, lb.....	22	20	35	18	16½	.....	30	25	30	20	25	30	25
27.9	4.36	Salmon, lb.....	28	25	32½	26½	25	.....	30	.....	.....	40	20	35	20
27.9	4.23	Salmon, Cnd., No. 1, tall, red Alaska, 1 lb.	30	28	26	29	27	25	25	27	25	25	30	20	30
55.5	6.03	Sardines, Cnd., ¼, oil, key, Dom., 3¼ oz.	12½	20	8½	18	8	10	.....	8	.....	8	7	10	8

JANUARY 2, 1918

Buffalo, N. Y.	Pittsburgh, Pa.	Columbus, Ohio	Cleveland, Ohio	Indianapo- lis, Ind.	Louisville, Ky.	Little Rock, Ark.	Nashville, Tenn.	Memphis, Tenn.	Chicago, Ill.	Madison, Wis.	St. Paul, Minn.	Fargo, N. D.	Sioux Falls, S. D.	Des Moines, Iowa	Denver, Colo.	Salt Lake City, Utah	Reno, Nev.	Seattle, Wash.	Los Angeles, Cal.	San Fran- cisco, Cal.
.....	322½	329	315	330	330	325	290	300	295	290	285	285	310	300	265	270	325	280	295	295
196	240	171	.....	155	.....	175	.....	.....	135	159	130	170	180	160	150	155	210	150	159	170
80	80	80	80	.....	105	80	85	136	70	72½	60	60	75	75	75	65	70	63	63	65
14	13	15	13	14	15	15	13	14	13	14	15	15	15	15	15	15	14	13	12½	15
.....	24½	25	20	25	25	25	22	23	25	25	25	25	25	25	25	.....	30	24	22	20
15	11	12	12	12	12	12	10	10	12	12	12	12½	13	12½	15	15	18	13	11	15
7	6	7½	7½	8	8	9	7	10	6	7½	8	7	.....	8	10	10	9	8	7½	8
10	11	12	12	16	12½	12	9	10	12	10	15	10	12	12½	15	12½	11½	12	10	10
13	10	10	12	12	13	12½	10	11	12	12	12	12½	12½	12½	15	15	12	11	11	12½
14	7	3	7½	7	6½	6	4	5	7	8½	6	7	7	8	10	7½	8½	7	3	6½
15	8	3	9	.....	8	15	7	5½	10	15	10	8	.....	10	10	.....	8	8	3½	10
.....	7	10	10	10	10	.....	12	12	10	12½	10	10	12	20	15	12½	12	12½	7½	10
9½	8	10	9	8	9	10	10	9	8½	10	9	10	10	10	10	10	10	10	7	8
16	24	17	17	20	25	.....	15	16	18	19	20	15	.....	17½	20	16	16	15	14	18
7½	6½	13	7	8	8	8	6	6	7	8	7½	8	7½	7	8	7½	7	5½	6	7½
.....	9½	15	12½	18	.....	12½	.....	14	15	13½	12½	10	12½	15	10	.....	15	10	9	12½
11	10	12	10	14	13	11	7	.....	.....	11½	11	10	10	15	15	12½	15	13	11	10
10	9½	9	9½	9	10	9½	9	9½	8½	9	10	9	9½	9	10	10	8½	8	8	8
100	.....	50	85	80	90	75	67	71	100	85	75	90	95	90	95	100	97	90	88	95
30	25	30	30	25	.....	20	20	.....	28	25	25	30	25	28	25	20	18	20	21	25
50	52½	43	42	47	55	47	45	43½	50	40	50	50	50	50	55	50	60	50	55	50
56½	55½	35	58	53	60	60	60	55	56	55½	52	50	55	55	55	55	60	60	58	60
35	33	33	32	34	30	35	32	31	32	33	33	35	30	33	35	35	35	30	31	30
.....	33	33	34	34	.....	37	35	32	34	31½	32½	35	33	30	38	35	.....	35	33½	38
120	97½	125	120	125	110	100	115	125	115	110	125	150	140	120	110	175	110	125	99	120
35	35	65	45	75	75	60	55	52	58	70	70	75	75	65	90	70	60	60	36	50
.....	65	.....	65	65	75	65	.....	60	70	70	65	60	45	65	90	75	65	60	60	70
22	22½	23	23	29	30	25	25	.....	25	30	22	25	25	30	30	27	25	20	18	20
20	25	14	18	.....	.....	17½	17	17	.....	.....	20	18	15	.....	20	17½	14	17½	14	15
.....	17½	12	15	21	20	16	12½	14	18	15	15	18	17	15	20	17½	15	14	15	15
30	18	20	20	22	25	25	17	15	25	25	25	25	24	20	25	25	25	27	23	20
30	19	27½	25	35	30	30	25	22	25	30	25	30	25	30	30	25	27	25	22	15
15	13	15	12	14	15	15	12	.....	15	16½	15	15	15	15	15	15	15	15	12	15
20	14½	15	15	21	20	17½	.....	18	16½	17½	15	18	20	12½	20	17½	15	14	14	15
3	3	2½	5	3	4	4	3	3	3	2½	2½	2½	2⅓	2⅔	2	2	2½	2	2½	4
9	6	.....	7	10	7½	3½	4	4	8	10	10	10	5	7½	6	5	6½	6	4¼	7
5	3	5	4	5	6	6	4	4½	5	5	4	5	5	5	2½	5	3	3	3	3
20	19	12½	18	21	20	20	15	17	20	18	20	15	23	17½	20	20	18	17	14	15
20	18½	20	19	18	20	20	17	17	20	20	20	17½	22	20	20	17½	16	15	15	15
25	14½	22	15	19	20	15	.....	15	15	20	15	15	15	15	15	15	15	19	16	10
20	16½	15	15	15	20	15	12½	13	15	17½	15	15	18	12½	15	15	15	21	12	12½
20	14½	15	18	15	18	17½	11	15	16	15	12½	15	17½	12½	15	12½	12½	23	13½	12½
14	14½	15	15	17½	20	20	.....	.....	15	11	15	15	.....	10	25	17½	16	10	11	15
22	16	20	.....	.....	15	15	.....	16	.....	15	25	20	20	20	20	.....	20	15	18	20
.....	19	20	20	19	20	20	14	16	20	21	18	20	20	17½	20	17½	15	16	15	12½
4	4	4	5	5	5	7	3	.....	4	5	4	5	5	5	2	5	3	2	3	2
.....	.....	.....	5	.....	.....	6	.....	.....	3	5	4	3	5	.....	5	2½	3	2	.....	3
3	.....	4	5	5	3	6	3	2½	3	3	3	3	3	5	2½	2½	3	3	.....	3
30	25	27	28	29	.....	30	28	.....	25	25	25	35	50	30	55	40	50	25	20	50
75	66	65	68	69	65	55	60	.....	68	55	60	50	45	55	65	65	65	60	52	60
13	13	11	12	11	13	20	10	16	13	12	10	13	10	14	12	10	10	12	14	12
35	33	35	33	35	40	35	45	32	37	37½	35	35	35	35	35	35	35	30	29	30
29	30	25	26	35	30	25	25	22½	28½	22	28	25	30	25	30	25	22	22	22½	25
35	35	30	40	38	50	25	30	25	35	.....	33	35	35	40	40	40	30	20	37½	35
26	35	33	26	27	.....	25	.....	28	28	20	25	25	25	30	25	32½	26	18	.....	35
.....	35	33	30	32	34	30	.....	30	32	25	28	28	30	35	35	32½	32	30	32	35
35	30	30	28½	31	32	30	30	28½	35	26	33	30	35	30	30	35	30	38	36½	40
48	45	40	38	45	50	45	45	35	48	50	50	50	40	45	50	42½	50	40	55	40
35	38	30	42	33	35	40	25	27	32	.....	.....	25	25	30	35	40	30	35	45	65
22	21½	20	20	33	35	20	15	25	28	25	25	.....	25	25	30	27½	.....	12½	20	25
25	30	12½	22½	.....	.....	30	15	14	25	20	10	25	25	30	20	.....	.....	15	22	25
28	30	30	30	30	40	30	.....	30	30	25	28	30	30	30	30	27½	27½	17	.....	40
24	22½	25	22	30	35	25	.....	27½	28	20	.....	18	28	25	35	25	.....	.....	.....	.....
26½	25	30	30	30	.....	30	.....	30	28	25	25	30	30	30	28	27½	26	17	.....	30
30	29	20	30	23	30	30	20	16	30	25	28	30	30	30	35	25	30	35	34	25
20	9	10	10	.....	20	7	8	7	12	14	7½	8	7½	8	15	10	12½	17	8	12½

A Study of the Development of Bacteriology as a Basis for Home Economics

By J. E. GREAVES,
of the Department of Bacteriology and Physiological Chemistry,
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PROBABLY in no field of human endeavor has research been crowned with such glorious achievements, at least insofar as the welfare of the human race is concerned, as in the field of bacteriology, and this in the face of the fact that bacteriological research had a most humble and recent origin. Even the dawn of its very beginning dates back only to the last quarter of the seventeenth century, to when a Dutch linen-draper spent his leisure time in the grinding of lenses. In this he became so proficient that his lenses were superior to any made before. Turning them on various substances—rain-drops, saliva and many putrifying things—in all these he saw living, moving forms, unguessed until now. Some were round like a billiard ball, others straight as a rod, while still others appeared like corkscrews. Some of these minute specks vibrated back and forth, but others shot ahead with such speed that they appeared to tear through each other. He found that the form and movement of the organisms varied greatly, depending in a degree upon the source of the material examined. In short, this patient worker with his crude apparatus gave a fairly accurate description of these minute forms of life. But all this did not awaken the world to even a faint realization of the wonderful invisible forms of life which were present in everything and were always working for good or evil. It did, however, revive a discussion which had waxed long and furious as to whether life can spring spontaneously from inanimate matter, or whether it is the descendant of pre-existing living organisms.

Back in the sixteenth century it was thought by even the most highly educated, that mice could be spontaneously generated by placing some dirty rags, together with a few grains of wheat or a piece of cheese, in a dark place. Or if, perchance, they wished to generate scorpions, they thought it easily done by scooping out a hole in a brick, placing in it some sweet basil and partly covering it with a second brick. In a few days the herb was transformed into a real scorpion. Every one thought it a self-evident fact that maggots sprang spontaneously from a decomposing meat or cheese, until an Italian poet and physician took the simple precaution of covering the mouth of jars containing meat with a screen so that flies could not enter. Flies were attracted by the odor and deposited their eggs on the gauze and it was from these that the so-called "worms" arose.

The theory of the spontaneous generation of mice, scorpions and maggots had been proven to be untenable. But how about these microscopic organisms? They surely could develop directly from organic material. For now anyone provided with this new instrument, the microscope, could easily demonstrate for himself the spontaneous generation of microscopic eels in vinegar, or produce myriads of different and interesting living creatures in simple infusion of hay or other organic material.

Many an ingenious speculative theory was formu-

lated to account for the formation of these minute organisms, and Needham, a Catholic priest, took decaying organic matter and enclosed it in a vessel which he placed upon hot ashes to destroy any existing animalculae. Yet later he found micro-organisms which were not there in the beginning. Later Spallanzani repeated the work, as he felt that Needham had not exercised sufficient care, and that the organisms got in from the outside. This latter worker placed the material in hermetically sealed flasks and boiled it for one hour. Even after many days no organisms developed in the infusions.

But the believers in the theory of abiogenesis were not convinced, and we find them claiming that the boiling had altered the character of the infusion so that it was unable to produce life. Spallanzani answered this by cracking one of the flasks so that air could enter. Decay soon set in. Even this was not sufficient to overthrow a popular belief, for the claim was made that the hermetic sealing of the flasks excluded the air, and air was essential to the generation of these forms of life. This objection was answered by the work of many an ingenious investigator, some of them passing air through tubes containing acid and thence into the infusion, the acid removing the micro-organisms, others by passing the air through a red hot tube. But the final proof came when it was shown that it was sufficient to place cotton plugs in the neck of the bottles so that, as the air passed in the microscopic organisms would be held back by the cotton. Every now and then the contents of a flask would spoil, even after it had been carefully stoppered and boiled. This remained a stumbling block in the way of those who maintained that life sprang only from life, until in the year 1865, when Pasteur demonstrated that many bacteria may pass into a resting stage, and while in this condition they will withstand conditions which quickly kill them while in the vegetative stage. Eleven years later Conn. of Breslau, investigated very carefully organisms in this resting or spore stage, and today we know forms of micro-organisms which will withstand boiling water for 16 hours without being killed, and others even resistant enough to endure for many hours a 10 per cent solution of carbolic acid.

Since the dawn of history man has been interested in the wonderful process known as fermentation, but although many an ingenious theory has been formulated to explain it, little more than theory existed until the classic works of Pasteur on fermentation appeared about 1837. Pasteur claimed that all forms of fermentation were due to the action of microscopic organized cells. An idea such as this, even at this late date, did not go unchallenged, for we find no less illustrious workers than Helmholtz and Liebig opposing it. The latter even scoffed at such an idea, writing, "Those who pretend to explain the putrefaction of animal substance by the presence of micro-organisms reason very much like a child who would explain the

rapidity of the Rhine by attributing it to the violent motions imparted to it in the direction of Burgen by the numerous wheels of the mills of Venice." For a time the battle waged long and furious, but eventually the careful experiments of Pasteur were so convincing that even the most skeptical was forced to believe.

If there were any doubts left in the minds of the scientific world as to the fallacy of the theory of spontaneous generation, after the work of Pasteur, they were dispelled by the work of Tyndall. Tyndall proved that in an atmosphere devoid of dust, as on the tops of mountains and in some ingeniously constructed boxes used by him, perishable substances, such as beef tea, if sterile when placed in such an atmosphere, will keep for an indefinite period.

So far we have traced the development of what appears to be a very theoretical subject, but no one could foretell the wonderful structure that was to be reared on this foundation. Pasteur soon proved that a disease which was attacking the silkworm was caused by bacteria, and from this there developed the idea that disease in general is due to bacteria.

As early as 1863 investigators had seen in the blood of some animals that died of a disease known as anthrax, a very small rod-like organism which permeated all the capillaries. Their experiments showed that the blood from such an animal, when injected into the veins of a second animal, caused it to die of the same disease. But they found that there were times when the organism could not be discovered in the blood of the dead animal, although injection with blood from this animal would cause the death of another. This fact left a doubt in the minds of thinking men as to whether this rod-shaped organism was the cause of the animal's death or only some invisible element in the blood. Not until 13 years later was this fully settled by the work of Robert Koch. Koch not only saw the rod-shaped organism, but obtained it free from all other substances, and proved that it was the specific cause of the disease. This was followed by many other discoveries, until today we know that practically all diseases are due to these invisible foes. Yes, even many of the changes taking place in the body and associated with old age are probably caused by the products generated by bacteria.

The workers in this field are not satisfied with knowing the cause of a disease, but also want to know how they can ward off disease, and how to cure it once it gets a foothold. Pasteur announced that he had found a preventive for anthrax, but his statement was immediately challenged by the president of an agricultural society in such a way that it was brought to the attention of the entire civilized world. This man suggested that the subject be submitted to a decisive public test, and offered to furnish 50 sheep, one-half of which were to be protected by Pasteur from anthrax. Later they were all to be infected by the disease-producing organism and if the vaccine were a success the protected ones would, of course, remain healthy, the unprotected die of the disease. The challenge was accepted by Pasteur, but he suggested that there be substituted for two sheep, two goats, and that ten cows be added. These latter should not be considered as rigidly within the test, for he had not extended his experiments to cattle. Before this time the fame of Pasteur was considered firmly established, but now all the world looked on in wonder, doubting that any sane man would make such a preposterous claim. Part of the animals were protected by Pasteur, and on the

appointed day men from all parts of the world gathered to see this scientific experiment. The protected and unprotected alike were inoculated with the disease germ. All of the unprotected sheep, goats and cows soon sickened and died, but not one of the protected animals was even affected. And thus was ushered in the beginning of curative and preventive medicine, a science which was to save millions of human beings from suffering and premature death.

It has been estimated by conservative writers that Pasteur's discovery of the means of preventing or curing anthrax, silkworms' disease and chicken cholera, added annually to the wealth of France a sum equivalent to the entire indemnity paid by France to Germany after the War of 1870.

This was only a part of the work of this great man, for in 1885 he announced a cure for hydrophobia. Prior to this time the disease developed in at least 16 per cent of the individuals bitten by mad dogs, and of this 16 per cent, 100 per cent died. Since Pasteur's discovery the number of deaths from this cause has been reduced to almost zero. The profound importance of his work has been well summarized by Lord Lister's words: "Truly there does not exist in the entire world any individual to whom the medical science owes more than they do to you. Your researches on fermentation have thrown a powerful beam, which has lightened the baleful darkness of surgery, and has transformed the treatment of wounds from a matter of uncertain and too often disastrous empiricisms into a scientific art of sure beneficence. Thanks to you, surgery has undergone a complete revolution which has deprived it of its terrors and has extended almost without limit its efficacious powers."

And Tyndall writes, "We have been scourged by miserable throgs, attacked from impenetrable ambushes, and it is only today that the light of science is being let in upon the murderous dominion of foes."

In the realm of medicine one discovery after another has followed in rapid succession during the last few years until today diphtheria, instead of having a death rate of over 30 per cent, has less than 3. Typhoid fever is all but conquered. Asiatic cholera and the yellow fever have been nearly wiped from the face of the earth, thus making possible the building of the Panama Canal. And thanks to the wonderful work of Lord Lister we no longer have that terrible supuration which before his time followed even slight wounds. The knowledge of bacteriology has thus gone far to protect all individuals against disease and aided much when they were already stricken. If we could but estimate the value to man of the resulting absence of sickness we would find that it ran into millions of dollars, to say nothing of countless precious lives. We have not only learned the nature of the diseases which bacteria produce but the methods by which bacteria pass from individual to individual. Many of them use the common house fly as their airship, others the flea, while still others will chance a ride with the bed bug. Sometimes they find their way into food or onto clothing and are thus transported from place to place. Some are picked up by particles of dust. But to the disease-producing organisms this last method of travel is much more fatal than is the modern airship to man, although the spore-forming organisms may make the journey in this manner with a fair degree of safety. It is not that the fall would hurt these specks of living matter, but that when struck by the direct ray of the sun they are killed in

a very short time. Many cannot even withstand diffused sunlight for any great length of time. Moreover, many could not journey any great distance even in the dark, for their bodies are about 90 per cent water, and if not clinging to some moist substance they soon lose sufficient moisture to cause death. Disease-producing organisms are often found in the mouth, sometimes in apparently healthy people, and they can safely make the journey from the lips of one person to those of another on the common drinking cup. Or if not distributed fast enough in this manner the saliva is continually spread on all objects by the fingers.

Furthermore, although bacteria are not, contrary to the common conception, conveyed in the breath, they may be carried several yards in the fine spray forced from the mouth in speaking. Probably the crowning discovery along this line is the fact that the great majority of all disease germs multiply only in the body of the susceptible animal and are conveyed from individual to individual by direct contact or in food, and that some of them, on finding their way into an appropriate food, multiply with enormous speed.

These, the underlying basic principles of modern bacteriology, are of vital importance to the student of home economics, who must crystallize public sentiment to a degree where it will demand that food be protected from infection. Moreover, the majority of cases of infectious disease have been and probably will be, for some time at least, cared for in the home. And a lack of knowledge concerning these fundamental principles of bacteriology spells ruin and disaster, while knowledge will go far to check the spread of disease and minister to those already afflicted.

Conservation of the Meat Food Supply.

From Service and Regulatory Announcements, Bureau of Animal Industry.

The co-operation of the proprietors and operators of official establishments is earnestly requested for the elimination of loss or misuse of meat and fats so far as shall be consistent with the production of a clean and wholesome meat food supply. The prevention of loss or misuse is of such importance to the nation that every one should deem it to be his duty to aid in its accomplishment. It is the purpose of the bureau to meet its responsibility in the matter, but the object in view cannot be attained by the bureau alone; the full co-operation of the establishments themselves is absolutely essential to its attainment.

First, it should be understood by all that it is not proposed to achieve conservation through a surrender of the purposes for which inspection is maintained. It is now, as heretofore, the bureau's duty and responsibility to see that meat and products are sound, wholesome and fit for food when passed, as contemplated by the law and regulations, and to see that the integrity of the mark of federal inspection is preserved.

In this connection it may be cited as indicating the bureau's attitude on the subject that the elimination of loss, waste and misuse was made the dominant subject of discussion at the recent annual meeting of inspectors at Cincinnati, Ohio, and the inspectors were directed to give it further careful and practical consideration upon their return to their respective stations.

It is not within the scope of this notice to enumerate all the things which establishments may do to

eliminate waste and misuse; therefore, only general suggestions will be offered. Perhaps no single item merits more attention than the conservation of fats. In some of the smaller cattle departments no attempt is made to conserve the slaughter fats for food purposes, and in a considerable number of such departments in larger establishments variable quantities of such fats are diverted from possible edible to inedible products. This loss of product is largely due to failure to install and maintain adequate equipment and effective methods for the cleanly handling of such products throughout their preparation. There are establishments, both large and small, in which efficient and practical methods of handling viscera at the time of slaughter and in the course of trimming and separation are so well maintained that the loss of fats on account of unnecessary soiling is reduced to an absolute minimum. It is believed that the attainment of this standard is practicable for all establishments.

The provision in the regulations that permits the meat of animals of certain kinds and conditions to be passed for sterilization is a conservative measure of the highest importance; however, notwithstanding its value as an economic or conservation measure, there are establishments that choose to utilize hog carcasses passed for sterilization for the production of lard only. The flesh as well as the fat being rendered, such disposal of the flesh is a misuse and waste because it has a relatively low value for lard production while its meat value is high. At still other establishments all the flesh and fats of cattle passed for sterilization are rendered, by the choice of the management, into inedible products simply for the reason that it has not been found as convenient or as profitable as desired to provide the facilities for their proper handling. These are instances of an absolute waste of potentially good food material.

Numerous preventable losses and wastes might be named, such as the spoiling of fresh meats and meats in cure through delayed or inadequate refrigeration. This is of particular importance in the transportation of fresh products. The practice of affixing caul fats to mutton and of leaving attached to other dressed carcasses or to market cuts certain excess fats leads to large wastes of the best fats in the retail market or in the home, whereas the removal and utilization of these excess fats in the establishments would obviate much of this loss and waste. Other preventable losses are properly chargeable to carelessness in the conduct of operations. The occurrence of tank-water sourness in lard is an example of the damage or loss that may result from carelessness in the ordinary operative procedures.

The foregoing illustrations indicate some of the ways in which establishments may co-operate in the elimination of waste or misuse of meats and fats. A further study of the subject by the establishments doubtless will show the way to many other important opportunities for legitimate conservation.

Inspectors should appreciate the importance of the subject and join in an intelligent and helpful co-operation with establishments in this endeavor to accomplish on a large scale effective conservation of the nation's meat supply, keeping in mind that now, as always, it devolves upon them to perform their duties fully and that they see to it that such performance is not the cause of unwarranted waste.

The Food Problem

There was recently published by The MacMillan Company of New York a book entitled "The Food Problem" (\$1.25), by Vernon Kellogg of the U. S. Food Administration and the Commission for Relief in Belgium, and Professor in Stanford University, California, and Alonzo E. Taylor of the U. S. Food Administration and Exports Administrative Board, and Professor in the University of Pennsylvania, with a preface by Herbert Hoover, U. S. Food Administrator, and Chairman of the Commission for Relief in Belgium. Because of its unusual significance we consider an extended review advisable.—Editor's Note.

THE first fact that arrests the attention of the reader or the reviewer of this ambitious book is its illustrious origin. Its sponsor, Herbert Hoover, needs no introduction. As for its authors, Dr. Taylor will be further identified to the reader through the abstract of his article published in this issue of the JOURNAL under the title, "How Germany Treats Her Prisoners of War;" Prof. Kellogg, his co-author, will be recognized as the writer of the article in the November number of the *Atlantic Monthly*, "Patriotism and Food."

The book consists of Mr. Hoover's preface; an Introduction; Part I, "The Problem and the Solution"; Part II, "The Technology of Food Use," and a Conclusion. Of these, the Introduction and Conclusion in entirety, the first chapter, the second (with a few additions) and the opening of the third, constitute Prof. Kellogg's article in the *Atlantic Monthly*. It is to be presumed that Dr. Taylor is responsible for the chapter on "Food Control in Germany and Its Lessons," and for Part II of the volume.

The construction of the book is essentially logical. Every statement is intelligible to the average mind. There is nothing technical in subject-matter or treatment. Yet the popular character of the book detracts in no manner from its soundness.

In his preface Mr. Hoover calls attention to the fact that "the war has entered a phase in which food dominates the economics, strategy and statesmanship, not only of the countries at war but of neutrals as well." And he points out four features of the food problem that seem to him most outstanding: food control, although it inevitably entails disconcerting economic reactions, is the lesser evil; taste and appetite must be consulted and satisfied in some degree—a "balanced ration" alone will not fill the bill; mal-nutrition and under-nutrition do not kill, but rather the diseases that follow on their heels; and the reduction in the aggregate of the world's food animals is not only of equally critical present importance, with the reduction of the world's cereal supplies, but is a graver and more permanent danger on account of the greater difficulties of rehabilitation.

Prof. Kellogg's introduction emphasizes the international character of the food problem and the predominance of this problem over all other aspects of the world war. What, he asks, is the world doing to meet this problem?

Part I answers this question in four chapters, dealing respectively with the food situation of the Allies and the United States, the system of food administration in the United States, the system in England, France and Italy, and food control in Germany.

Even in peace times England, Scotland, Ireland, France, Italy and Belgium produced but 60 per cent of their necessary cereals. The United States has always supplied most of the deficit, and now must supply practically all. Russia's grain is held up. Bulgaria, Roumania and Serbia now serve Germany's needs;

Australia and India are impossibly distant under war conditions; the European neutrals are themselves so short that they, too, turn to us. Therefore, on us devolves the absolute necessity of supporting the allied armies and the civilian population as well.

Bread is in very fact the staff of life. "If the bread ration is normal, or sufficient, much repression or substitution can be used in the case of the other foods." Thus cereals become of paramount importance, feed-grains as well as bread-grains, since at a pinch the former can be used much more freely than in normal times for human consumption by mixing them with wheat flour, and since the food supply depends on the production of meat, animal fats and dairy products, in addition to sugar and grain, and these depend on the availability of the feed-grains.

Before the war the Western Allies (the United Kingdom, France, Belgium and Italy) produced an annual average of about 1,500,000,000 bushels of cereals. Their consumption averaged 2,250,000,000 bushels. But this year's production, because of loss of man-power and of actual land, and lack of fertilizers, will fall short of the average by half a million bushels. In France, for example, wheat production scarcely exceeds one-half the normal.

The meat situation is equally serious. In 1913 the Western Allies had over 100,000,000 head of cattle, sheep and hogs. The 1917 estimate put the number at 75,000,000 head. France alone has lost about 20 per cent since the war began.

As for sugar, before the war the Western Allies consumed annually about 3,000,000 tons, of which they produced less than half. England, consuming two-thirds of this amount, produced none at all, but depended for 70 per cent of her sugar needs on Germany, Austria-Hungary, Russia, Italy, France, Belgium and Holland, for 16½ per cent on Java, Mauritius, the West Indies (excluding Cuba) and South America; for 8 per cent on the United States and Cuba, and for the remaining 5½ per cent on scattered sources. But the production of French, Belgian and Italian sugar has been reduced one-third, and thus England's European supply has practically stopped.

This is the food situation of the Allies. What is the situation of the United States?

Our cereal crop for 1917 is estimated at about 5,700,000,000 bushels, but this includes an unusual excess of feed-grains. Our average consumption has been 4,607,410,000 bushels. That leaves, at the usual rate of consumption, a surplus of about 80,000,000 bushels of wheat and 1,000,000,000 bushels of the other cereals. The Allies will need from us before the next harvest about 460,000,000 bushels of wheat and 554,000,000 bushels of other cereals. Thus the situation with the latter is simple of solution, but with the former—bread—very difficult.

Our exports of meat, chiefly to the Western Allies, have increased from 493,848,000 pounds to 1,339,193,000 pounds in 1916—exclusive of exports of pork

products, which have gone up from 1,000,000,000 to 1,500,000,000 pounds. Our exports of dairy products have grown as follows: butter, from 4,500,000 pounds to 27,000,000 pounds; cheese, from 3,750,000 to 66,000,000; condensed milk, from 18,000,000 to nearly 260,000,000.

As for our sugar situation: normally we produce (with Cuba and the other West Indies) about 4,500,000 tons and consume 4,000,000 tons. During the war, production has risen to about 5,500,000 tons, making an excess of 1,500,000. But the Allies need at least 1,750,000 tons, perhaps 2,000,000 this year. "In other words we and the Allies need to draw about 6,000,000 tons from sources producing about 5,500,000; a problem in arithmetic—and eating."

The international phase of the food problem is, however, not the only one. Our own domestic problem is extremely serious, largely as a result of the hitherto unregulated manner of the attempt to provision the Allies. Our prices began to show a permanent tendency to rise about a year after the war began. By July, 1916, almost all the important commodities cost from 50 to 100 per cent more than in 1914. By August, 1917, the cost of wheat, corn, barley, rye and potatoes had again more than doubled.

The problem reduces itself in part to the reduction and stabilizing of prices, partly through control of hoarding and profiteering in general; to the organization of our resources and regulation of supplies to the Allies and to neutrals, so that in the one case our prices will not be forced too high, and in the other we can be sure that our precious supplies do not leak through to Germany.

The solution, says Prof. Kellogg in Chapter II, is Food Administration. He reviews the history of the formation of our Food Administration under authority of the "food control bill," introduced by Congressman Lever in the House on June 11th, passed by Congress on August 8th and signed by the President on August 10th, 1917; summarizes the provisions of the bill; and points out what has already been done to carry these out—in regard to the cereal situation, sugar, meats, wholesale groceries, fish, canned goods, potatoes, dairy products, fresh fruits and vegetables. The various departments of the Food Administration are given, with the business of each, down to the states organization division and the "large and driving division of food conservation, *sensu strictu*," which connects the Administration directly with the people. The methods of this last department Prof. Kellogg takes up in some detail, pointing out how the people of the country have been reached, and concluding that excellent results are being obtained in actual food saving and in stimulated production. "How England, France and Italy Are Controlling and Saving Food" is the subject of Chapter III—"Americans who are asked to limit their consumption of bread, meat and sugar for the sake of supplying our Allies with food will want to know what the Allies themselves are doing in the way of food economy."

Italy, till now rather behind England and France in food regulation, is showing signs of even surpassing her allies—going so far as to adopt a definitive rationing system to cover all important staples like bread, meat, fats, sugar, etc. In 1915 government control was begun under the Department of Agriculture, but in January, 1917, the office of Commissary General of Supplies was created to handle the situation. Under Secretary for Agriculture Onerevole Giuseppe Canepa

holds this position (Commissario Approvisionamento).

Italy's wheat must now be milled at 60 per cent, the highest per cent of any of the Allies. Bread must be baked in loaves weighing $8\frac{1}{4}$ ounces, and there are all sorts of other regulations. Sugar is under drastic regulations, the allowance per year per person being put at 13 pounds, where we use 80 pounds. Saccharine is allowed to be sold for sugar, and "state sugar," a mixture of saccharine and sugar, is manufactured by the Government. The meat rules are stringent, and there are two consecutive meatless days. Public eating places are rigorously controlled as to bill-of-fare and hours for serving meals; no meal may consist of more than three dishes, of which only one may be a meat dish.

Through the fixing of minimum prices to producers the Government has attempted to stimulate production. These prices have had to be increased several times. All sorts of special advances and concessions have been made to farmers, and agricultural machinery is now obtainable by them on extremely satisfactory terms, this doing a great deal to increase cereal production in Italy.

From September, 1914, to January, 1917, the French food situation was in the hands of the Ministry of Commerce, Industry, Posts and Telegraphs; to March 20, under the control of the Ministry of Public Works, of Transports and Provisioning; since then in the hands of a specially created Ministry of Provisioning and Maritime Transports. M. Violette was in charge (Ministre du Ravitaillement) until September, when he was succeeded by M. Maurice Long.

The seriousness of the falling off in production, so much greater in France than in either of her Allies, is due to two facts: "she has contributed more of her man-power to the fatal trench lines, and sent this man-power sooner; also an appreciable fraction of her cultivated lands are in the hands of the invaders." Even further agricultural concessions and encouragement have been given than in Italy; fixed minimum crop prices have been greatly increased. Control of distribution began with a law passed in October, 1915. Minimum prices have been decreed by law, some of which have later been revoked. It has been the French experience, as in other countries, "that maximum price measures can be enforced with success only in the case of commodities the supply of which is under the control of the Government; where the supply is not thus controlled, maximum price measures afford little relief. If not considered high enough by the producers, they tend to force the commodities covered by them out of the open market."

Wheat is milled in France at 85 per cent, and 30 per cent of other cereal flour must be mixed with this wheat flour. Loaves must weigh 2.2 pounds, and the difference between their actual cost and the prescribed 50 centimes for which they must be sold is repaid to the baker by the Government. Each baker may sell only to persons and households on a list furnished him by the authorities. France has two consecutive meatless days a week and stringent regulations for slaughter-houses, etc. The sugar allowance is 18 pounds per year per person, but "the possession of a sugar card does not necessarily mean that one can buy sugar. To buy it one must find it to sell." The use of saccharine in preparing certain sweet products is permitted by a law passed in April, 1917. Even the domestic animals in France are on rations, with the

amount of their feed prescribed. Public eating places may not serve more than two dishes to each person, only one of them meat; bread may be provided only for five centimes a slice.

England's food problem did not become acute until about October, 1916, although various measures of government control were undertaken from August, 1914. Since October, 1916, however, her regulations have been drastic, and she has made a stronger appeal to the people for co-operation than any of her Allies. The Board of Trade at first had charge of the food situation, but in January, 1917, a special ministry was formed, headed at first by Lord Devonport as Food Controller, and after July by Lord Rhondda. Lord Rhondda "is not a food controller; he is literally a food dictator," he has absolute control of "production, manufacture, storage, transport, distribution, purchase or sale, use and consumption of any article of food."

England's encouragement of agriculture has been more efficacious than that of any other country. Her "Corn Production Bill" of April, 1917, guaranteed to grain farmers a sliding scale of minimum prices for wheat extending over six years, minimum prices for oats, and a minimum wage for farm laborers during this period. England's cultivated area has increased from less than 25 per cent of her total area* by about 800,000 acres, and the area for the 1918 crops is expected to show an increase of between two and three million acres. Wheat is milled at 81 per cent, and with wheat flour must be mixed from 30 to 50 per cent of other cereal flour. Eighteen cents for a 4-pound loaf is the fixed price, and, as in France, the Government will have to make up the deficit to the bakers. Sugar is also closely controlled.

England has had a good deal of difficulty in regard to control of public eating places, but she has finally settled upon an efficacious system that limits the amounts of meat, sugar, bread and flour that may be used per person, instead of limiting the number of courses. Especially stringent for England is the control of the production of beer. The voluntary rationing in the homes has showed great savings. It is from England that we get our "Food Administration Card," though her household cards are, of course, different in design from ours.

Prof. Kellogg concludes by pointing out the moral: "that our Allies who are asking us for imperatively needed help with their food supply—which means, if we shall meet their call, some control and conservation of our own supply—are not asking this without making on their own part a most earnest and adventurous attempt to help themselves."

"Food Control in Germany and Its Lessons" covers 28 pages and is consequently written with considerably greater detail than the foregoing chapters. Germany imported before the war from 15 to 20 per cent of her foodstuffs and exported in a large way only sugar. Austria-Hungary exported grains, sugar, and to a certain extent animal products, and as her exports more than balanced her imports in nutritional value the Central Empires should have been self-sustaining. This, however, was made impossible by their failure to act in unity, and in particular by Austria-Hungary's reluctance to permit foodstuffs to pass into Germany.

By fixing the price of wheat to the producer at

\$2.30 a bushel, by controlling seed and fertilizer, and by supplying farm labor—prisoners of war and reserves withdrawn from the army at time of seeding and harvest—the German authorities confidently expected to stimulate their domestic grain production average of 26,000,000 tons a year (the average consumption being 32,000,000) enough to make up the deficit of 6,000,000 tons. In spite of every effort, however, the grain crops failed to even equal the pre-war average. Substitution of women, children, old men, soldiers for brief periods, and prisoners of war did not make up for the withdrawal of men, and it was impossible to maintain the intensive methods of agriculture on which Germany had depended for her crops. The sugar beet acreage was cut down one-fourth, to increase the potato acreage; yet instead of a normal sugar supply from this decreased area, Germany, from a country able to export sugar, has become a country able to supply only one-half of her own sugar needs. Moreover, in spite of all efforts, the potato crop decreased to below normal.

It was found impossible, even with Teutonic discipline, to control the feeding of wheat and rye to animals by the peasants. And it was also found impossible to force the keeping down of live-stock to a number not in excess of what the land could support, and consequently the physical condition of the live-stock was poor. The drastic measures of the Government in the past summer have succeeded in reducing the herds to about two-thirds of their pre-war number, and if Russian resources should be opened to Germany, in time practically unlimited supplies of feeding stuffs would be available.

Germany's milk supply has been only about 60 per cent normal since 1915, and although the children have not suffered, the adults have felt keenly the lack of milk, butter and other fats so necessary to their taste.

The efforts of the authorities to control distribution have been only partially successful. They were most successful as concerned bread, although the dilution of flour by the use of 30 per cent of potato reduced the nutritive value of the bread by practically one-third of its protein content. The price of potatoes was maintained by the appropriation by the Government of funds to pay the difference between cost of production and cost of sale. In the case of meats, dairy products, fruits and vegetables government control by the fixing of maximum prices was a failure, as the wealthy could always evade it and it caused extreme bitterness among the working classes against the country producers. In short, the rich came out ahead in every way: they had the money to procure meats, dairy products, fruits and vegetables direct from the farmers by paying more than the permitted maximum prices, and they also had the money to buy up sugar and flour—the two staples which could be hoarded. Thus "the natural trend of events worked to the advantage of the well-to-do classes and to the disadvantage of the poor," and resulted in the growth of a most intense class feeling. The wealthy and the agrarians lived comparatively well; the industrial workers bore the brunt of the situation.

Since May, 1916, the German authorities have been forced to cut down on the weight-building side of the ration, and the industrial classes are "trained down hard like athletes." There is no evidence, however, that their health has suffered—"no increase of infectious disease and no abnormality in the death rate." It

*England's total area is 58,340 square miles or 37,337,600 acres.

is only in output of work that the conditions are showing. Professor Taylor does not believe that "it could ever be possible to starve out Germany, even if she were shut within her own borders, except in event of unusual crop failure. The purpose of the food blockade is not to starve Germany but to compel her to produce all her own foodstuffs, and thus have to withdraw labor, capital and organization from industrial lines directly contributing to the war."

The great success of the Germans in the line of food control has been the practical elimination of waste. The reduction of the food supply from 3,600 calories before the war to 2,000 in the industrial cities in the past year has not been arrived at purely through a lessened supply, but also through a materially lowered degree of waste.

"All in all, the nutrition of the individual classes in Germany during the last year and a half has been a revelation to the scientific world, even without considering the question as to the ultimate results of such a reduction in the diet." Maximum prices for the consumer and a guarantee of ration have been for the most part failures. The substitutions have been partially successful from a nutritional point of view, but not at all successful "from the point of view of the tastes of the industrial classes concerned. Certainly if a rationing system cannot succeed in Germany it cannot hope to succeed anywhere."

Part II, "The Technology of Food Use," deserves much more space than can be allowed it in this review. It takes up in turn the "Physiology" and the "Sociology of Nutrition," and "Grain and Alcohol." Protein, fat, carbohydrates, mineral salts, vitamins and water—the definition of each of these, its importance and place in the diet, the psychology of the diet and the influence of trade conditions on the diet, compose a chapter making an excellent background for the foregoing division of the book and also, in its present position, a well worth-while more technical study of the food problem. Under "The Sociology of Nutrition" are taken up the problems of supply and demand—the transportation problem and the providing of equitable distribution; the indispensable elements in diet—milk, bread, meat, sugar, fruits and vegetables, fats and table beverages, with war conditions as affecting each of these commodities among the belligerents; the garbage question; and a warning against abuse of power by any food administration in order to force a fixed ration upon a people widely divergent in tastes and habits—as can well be done in Germany, but could not possibly be done in the United States.

The conclusions arrived at in the chapter on "Grain and Alcohol" are, briefly, as follows: feed grains, not bread grains, are chiefly used in the manufacture of alcoholic beverages and these on an average of not much over 2 per cent of the total grain production; little gain would result from feeding this 2 per cent to live stock as compared to feeding to them the residue from the 2 per cent after used in manufacturing alcoholic beverages; large gain would result if this 2 per cent were devoted directly to feeding human beings.

"Patriotism and food," exclaims Professor Kellogg in his Conclusion. "Winning a world war by eating corn and chicken instead of wheat and beef. It will take much education to get this point of view. An army of food-savers does not appeal to the imagination at first consideration. But remember the words of M. Block: 'That is the future of war—not fighting,

but famine.'" Germany is fighting "as a whole people, a whole nation mobilized. * * * That she has not already been beaten is due no less to her food organization than to her fighting organization. She has put patriotism and food together. So must we. * * * The administration of food is a test of what our form of government is worth. If success in it did no more than insure its immediate aim—providing our Allies with food—it would be wholly worth while. But it will do more than that; it will prove our faith in ourselves." ISABEL BURR CASE, Assistant Editor.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

- 1,245,669. Method of treating maple-syrup. Alice E. Brown, Shelburne Falls, Mass.
- 1,245,751. Alimentary meat compound preserved by means of sugar. Adrian Machado, Montevideo, Uruguay.
- 1,245,818. Process of obtaining proteid matter from corn. Jokichi Takamine, New York, N. Y., and Sadakichi Satow, Sendai, Japan.
- 1,245,922. Stop-motion for canning machinery. Robert M. Huddleston, San Francisco, Cal.
- 1,246,127. Paring and coring machine. William M. Luther, San Francisco, Cal.
- 1,246,223. Process for removing the skin from dried fruits. Hermanus A. Beekhuis, Hanford, Cal., assignor to California Peach Growers, Fresno, Cal.
- 1,246,265. Container for ice-cream blocks. Lionel M. Hender, Baltimore, Md.
- 1,246,335. Dough-trough. Bernhard Seelinger, Brooklyn, N. Y.
- 1,246,392. Preservative for fruits, eggs, and the like. Teofanes Carrasco, Atzacapotzalco, Mexico.
- 1,246,463. Fruit-sizing machine. William K. Price, Selah, Wash.
- 1,246,572. Duplex raisin and the like cleaner. Thomas H. Elliott, Selma, Cal.
- 1,246,812. Apparatus for drying macaroni and other edible pastes. Karl Gammel, Cleveland, Ohio, assignor to The Cleveland Macaroni Co., same place.
- 1,247,349. Art of bread-making. Robert and Arnold S. Wahl, Chicago, Ill.
- 1,247,482. Butter substitute. Robert H. Adams, Ridgewood, N. J., and Howard Beatty, Hinsdale, Ill.
- 1,247,597. Process for the extraction of cocoanut-oils. George G. Turner, New York, N. Y., and Clinton H. Leighton, Brooklyn, N. Y.
- 1,247,768. Gearing for mixing and kneading machines. Anton Wild, Saginaw, Mich., assignor to Werner & Pfleiderer Co., same place.
- 1,248,214. Tomato-scalder. Jacob P. Walker, Havre de Grace, Md.
- 1,248,521. Casing salting and skeining machine or the like. Benjamin Marland, Chicago, Ill.
- 1,248,629. Bakery machinery. Robert L. Davidson, Seattle, Wash.
- 1,248,682. Rotary dough-proofing device. Frank X. and Paul Lanterbur, Sidney, Ohio.
- 1,248,884. Rice food product. Aiji Matsuo, San Francisco, Cal.
- 1,249,044. Beverage and process of making same. John G. Dietrich, McMinnville, Ore.
- 1,249,049. Apparatus for treating milk. William A. Hoeth, Greenfield, Wis.
- 1,249,179. Sizer and grader. Arthur M. O'Quinn, Miami, Fla.
- 1,249,205. Method of preserving flesh. George D. Rogers, Gloucester, Mass.
- 1,249,259. Maltless non-alcoholic beverage and process of producing the same. Robert Wahl, Chicago, Ill.
- 1,249,847. Candy-pulling machine. Harvey P. Spencer, Chicago, Ill.
- 1,250,072. Process of bleaching and maturing flour. James N. Alsop, Owensboro, Ky.

Percentage Labeling Not Required.

There was recently decided in Ohio a test case having to do with the validity of laws calling for percentage statements in labeling requirements. The Ohio law, in common with many other state laws, defines misbranding specifically, following the definition with a proviso to the effect that mixtures or compounds shall not be deemed misbranded provided certain formalities are complied with. The status of the manufacturer who sells a wholesome compound but does not elect to comply with the formalities enunciated in the law, has at all times been a moot point. This case, as it at present stands, goes to show that labeling requirements of wholesome compounds are not mandatory but are, on the other hand, optional, their adoption by the manufacturer excluding packages so marked from the defined offense of misbranding.

The Ohio law reads, in part, as follows:

"An Act to provide against the adulteration and misbranding of food and drugs.

"Be it enacted by the General Assembly of the State of Ohio"

"Section 3a. An article shall be deemed to be misbranded within the meaning of this act:

"(b) In the case of food, drink, flavoring extracts, confectionery or condiment: (5) * * * *provided*, that the provision of this act shall not apply to mixtures or compounds recognized as ordinary articles or ingredients of articles of food or drink, if each and every package sold or offered for sale be distinctly labeled in words of the English language as mixtures or compounds, with the name and percentage, in terms of 100 per cent, of each ingredient therein."

The case in question was based upon the sale in Ohio of a maple syrup compound manufactured by the Towle Maple Products Company of St. Paul, Minn., the lawyers in charge being Messrs. Lannen and Hickey of Chicago and Hubert D. Fuller of Cleveland.

The Court of Common Pleas upheld the view that the quantitative labeling requirements were mandatory, whereas the present court, that of Appeals, reversed the decision of the lower court. The case may be taken by the state authorities to the Supreme Court of Ohio.

The decision is as follows:

Court of Appeals, Allen County, Ohio.

Number 165.

The J. M. Sealts Co., a Corporation, Plaintiff in Error, vs. the State of Ohio, Defendant in Error.

December 28, 1917. Find error in that the judgment of conviction and sentence is not sustained by sufficient evidence and is contrary to law.

Judgments of justice of the peace and Court of Common Pleas reversed at costs of defendant in error, on the reasoning of the case in re. Wilson, 168 Federal Reporter 382, followed and approved in 176 Federal Reporter 382, and 186 Federal Reporter 387.

The proviso contained in Section 5785, General Code, is not a requirement that packages containing mixtures or compounds shall be labeled, with the name and percentage in terms of 100 per cent of each ingredient, as therein specified, but is an exclusion of such packages from the defined offense of misbranding.

Cause remanded to the justice of the peace, with direction to discharge plaintiff in error. Exceptions saved.

Dr. A. D. Melvin Dies.

Dr. Alonzo Dorus Melvin, chief of the Bureau of Animal Industry, Department of Agriculture, died December 7, at his residence in Washington, from pulmonary hemorrhage. Dr. Melvin had been ill for three years, but was not entirely incapacitated. He was at his desk at the Bureau of Animal Industry on the day before his death. The public services of Dr. Melvin since he became chief of the Bureau in 1905, that perhaps made him best known to the public were in connection with the three outbreaks of the foot-and-mouth disease among cattle, all of which were stamped out.

His services in the Department also have been marked by the total eradication of the cattle fever tick in 51 per cent of a great extent of southern territory quarantined in 1906. In his term of office the present meat inspection law and laws looking to the betterment of livestock industry, all of which were advocated by Dr. Melvin, were enacted by Congress.

Before he became chief of the Bureau of Animal Industry, Dr. Melvin had been assistant chief from 1899. His service in the Department began in Chicago in 1886. He was transferred to work in Baltimore in 1887. In 1890 he was sent to Liverpool, England, to inspect animals and vessels from the United States. In 1902 he was placed in charge of the meat inspection at Chicago and was chief of the inspection division from 1895 to 1899.

Brokers Eliminated by Big Sugar Company.

The American Sugar Refining Company, the largest handler of sugar in the country, has announced that it will hereafter cut out middlemen and distribute all its sugar in the United States through its own selling organization. Its statement is, in part, as follows:

"The announcement that the Company would deal direct with its customers has had the widespread approval of the trade. We have as yet to receive a single letter of protest from a customer or consumer.

"* * * We regard the system of brokerage as non-essential. It is wholly incompetent to provide an equitable distribution of sugar. Sugar is too important a staple to feel the pinch of the unnecessary middleman.

"At the present time there are between four and five hundred persons in our selling organization. The change announced will affect but 145 sugar brokers out of the 700 in business. Obviously it is an economic waste for double machinery to be used in performing the same purposes.

"In dealing directly with our own customers without the intervention of third parties, this Company is carrying out the policy of President Wilson promulgated under the food-control act, 'to keep all food commodities moving in as direct a line and with as little delay as practicable to the consumer.'"

Sheep's-Milk Cheese.

Two years ago there was not a single cheese factory in the State of Montana, while today there are 13 in successful operation and several more being installed. That State has a sheep's-milk cheese factory operated by Italians, who leased a flock of 600 ewes and took them to mountain pasture, where they are milked twice a day and the milk made into about 100 pounds of cheese daily. This type of cheese, valued for its high quality, is also made by Greek shepherds in California.

Specialty Manufacturers' Reappoint Officials.

The American Specialty Manufacturers' Association has reappointed Mr. H. F. Thunhorst as national secretary and Mr. Chas. W. Dunn as counsel.

Dr. J. R. Mohler Succeeds Dr. Melvin.

The Secretary of Agriculture on December 10 announced the appointment of Dr. John Robbins Mohler to succeed Dr. Melvin.

Dr. Mohler has been in the service of the Bureau of Animal Industry since 1897, and has been assistant chief of the Bureau since July 1, 1914. During the long illness of Dr. Melvin, Dr. Mohler performed the duties of acting chief as well as those of chief pathologist.

Dr. Mohler has translated a number of scientific works and is the author of numerous scientific articles on pathology, bacteriology and meat inspection published in government publications and scientific periodicals. He is a member of the following societies or committees: American Veterinary Medical Association, vice-president 1912, president 1913; U. S. Live Stock Sanitary Association, vice-president 1910; District of Columbia Board of Veterinary Examiners, president 1914-1915; International Congress of Tuberculosis, secretary of section; International Congress of Hygiene; Society of American Bacteriologists; Veterinary Medical Association of the District of Columbia; American Public Health Association; Society of Experimental Biology and Medicine; Pennsylvania Veterinary Medical Association (honorary); International Commission of the American Veterinary Medical Association on the Control of Bovine Tuberculosis, 1910.

Ruling of the Ohio Department of Agriculture on Egg Substitutes.

Numerous samples of egg substitutes have recently been analyzed by chemists of the Department. The majority have been found to consist of dessicated egg, milk powder, coloring matter and corn starch, or some similar product. Owing to the extravagant claims made regarding some of these substitutes and the misleading names given them, it has become necessary for the Department to establish standards of quality and labeling for these products.

Beginning February 1, 1918, all egg substitutes sold in the State of Ohio, either at wholesale or retail, to consumer or jobber, must comply with the standards and be labeled as required by this ruling, as follows:

1. No substitute shall bear a name containing the word "egg" unless such substitute contains 51 per cent of whole egg.
2. No substitute shall contain any artificial coloring matter of any description.
3. Egg substitutes shall not contain any preservative other than benzoate of soda and not more than one-tenth of 1 per cent of the same.
4. No label on such substitute shall bear any statement of comparative value unless qualified by the words, "For cooking or baking only."
5. Each package must be distinctly labeled with the name of the product and the name and address of the manufacturer, jobber or shipper.
6. No diseased, decomposed, putrid, infected, tainted or rotten animal or vegetable substance or article, whether manufactured or not, or the product of any diseased animal, shall be used in the manufacture of such substitutes. Nor shall the use of any substance, poisonous or injurious to health, be permitted in the manufacture of such substitutes.
7. No label of such substitute shall bear any statement, design or device that is false or misleading in any particular.

Work of the U. S. Bureau of Fisheries in 1917.

The annual report of the Commissioner of Fisheries to the Secretary of Commerce dwells particularly on the efforts of the Bureau to meet the condition imposed by the war. The enlarged importance of the Bureau's operations and the success of its efforts were due to the improved equipment of the service in both material facilities and personnel, to liberal financial support from Congress, and to the generous criticism and sympathetic attitude of the public.

The usual laboratory and field investigations have been directed toward the increased production of aquatic supplies, chiefly foods, and toward measures conducing to a reduction in wasteful and destructive practices among fishermen. The fish hatcheries have been run at their fullest capacity, and have yielded an enormous crop of food and game fishes. The work in connection with the commercial fisheries has reached a stage where very large benefits have accrued and the outlook for increased usefulness is most promising.

The Bureau has continued its active campaign in behalf of neglected products, especially those available for food, and has scored further successes in this important field.

The history of the establishment of the tilefish fishery is well known. Up to the end of the fiscal year 1916, when the fishery was only eight months old, there had been caught and sold over 4,388,000 pounds of tilefish for which the fishermen received more than \$210,000. By the end of the first twelve months, the catch was upward of 10,250,000 pounds, selling for more than \$400,000. During the fiscal year 1917 the landings aggregated 11,641,500 pounds, and the receipts of the fishermen exceeded \$477,000. The headquarters of the fishery are New York and Boston.

The campaign to make an asset out of a confirmed nuisance in the form of the grayfish has progressed rapidly and on the whole satisfactorily. Difficulties in the way of making this fish available and acceptable as human food have been overcome, and there is now an established industry on both Atlantic and Pacific coasts in canning, salting, and smoking grayfish.

Other more or less neglected fishes whose utilization has been advocated and otherwise aided by the Bureau are the sablefish of the northwest coast, burbot of the Great Lakes, and bowfin of the interior waters generally.

The scarcity of mammal hides for use in making leather has brought into prominence the value for this purpose of the skins of sharks and other aquatic creatures. Through the activities of the Bureau in behalf of fishermen and tanners, a market for such skins has been developed, and leather of a very good grade for certain industrial uses is now being made from this hitherto neglected source of supply. The general utilization of sharks for their meat and skins will have the effect of increasing the abundance of other fishes by reducing the numbers of their most destructive enemies.

The year's work in fish culture was attended with conspicuous success. The output of the hatcheries was larger than in any previous year, and for the first time passed the five billion mark. There were operated 55 regularly established hatcheries, 19 subhatcheries, and 74 egg-collecting stations. Increased efficiency and the larger volume of work reduced the unit cost of operations to the lowest point so far attained, namely, \$114 per million fish produced and planted, this amount covering all overhead charges, including salaries of administrative and clerical force in Washington.

Large quantities of fish eggs were donated to the various state fish commissions for hatching and planting under local auspices.

The distribution of the hatchery output by special fish cars and detached messengers required 138,717 miles of railroad travel by cars and 645,721 miles of railroad travel by messengers carrying fish in baggage cars. The fish were distributed in waters in every state and Alaska.

Embargo on French Walnuts.

A French ministerial order of December 4, published December 5, abrogates the permission granted November 22, 1915, for the exportation of walnuts to the usual allied and American countries.

FOOD REVIEW

BETTERKORN OIL—Manufactured by the Baltimore Pearl Hominy Co., Baltimore, Md.

This is a highly refined corn oil—one of the vegetable oils of which so much is heard nowadays. The germ of Indian corn is rich in an oil which, when



properly refined, makes an excellent edible oil for salad or cooking purposes. Many of the larger manufacturers of corn products are adding materially to the supply of available fats by carefully refining this vegetable

oil—a worthy effort which should be taken advantage of by all who are interested in enlarging the dietary.

The average analysis of **Betterkorn Oil** shows:

	Per Cent.
Cholesterol	1.25
Lecithin	1.50
Stearin	3.80
Olein	46.20
Linolin	47.25
	100.00

The high olein number is characteristic of corn oil and renders the product available for all uses commonly demanded of a high grade edible oil.

An important peculiarity of corn oil is its high smoking point—720 degrees Fahrenheit—as compared with 350 degrees Fahrenheit for lard and 500 degrees Fahrenheit for refined cottonseed oil. The acrid smell often associated with frying in oil is avoided by the use of such products as **Betterkorn Oil**.

Official Text of License Rules.

A pamphlet issued by the Food Administration gives the complete rules and regulations governing the importation, manufacture, storage, and distribution of food commodities for domestic trade by persons subject to license, comprising a list of the commodities licensed, the President's proclamation of October 8, 1917, and the specific rules and regulations governing the different commodities, as well as wholesalers, retailers, brokers, commission merchants, auctioneers, grain elevator men, millers, canners, sugar refiners, sugar manufacturers, ginners, crushers, and refiners of cottonseed and other oils, and cold-storage warehouse men. Copies of this pamphlet may be obtained from the Trade and Technical Press Section of the United States Food Administration, Washington, D. C.

Report of Cold Storage Holdings December 1, 1917.

Reports from 466 cold storages show that their rooms contain 80,081,360 pounds of **American cheese** while on November 1, 451 storages reported 85,239,181 pounds.

Reports from 552 storages show that their rooms contain 3,306,037 barrels and 4,574,076 boxes of **Apples**.

Reports from 385 cold storages show that their rooms contain 77,468,551 pounds of **Creamery Butter**, while on November 1, 396 storages reported 100,114,760 pounds.

Reports from 135 cold storages show that their rooms contain 2,325,863 pounds of **Packing Stock Butter**, while on November 1, 124 storages reported 1,785,332 pounds.

Reports from 456 cold storages show that their rooms contain 2,774,764 cases of **Eggs**, while on November 1, 446 storages reported 4,457,699 cases.

Reports from 179 cold storages show that their rooms contain 12,832,479 pounds of **Frozen Eggs**, while on November 1, 178 storages reported 16,089,986 pounds.

The total stocks of **Frozen Beef** reported by 361 storages on December 1 amounted to 277,284,941 pounds, while the total stocks reported by 326 storages on November 1 amounted to 212,345,570 pounds.

The total stocks of **Cured Beef** reported by 361 storages on December 1 amounted to 39,459,755 pounds, while the total stocks reported by 345 storages on November 1 amounted to 34,630,517 pounds.

The total stocks of **Lamb and Mutton** reported by 187 storages on December 1 amounted to 6,241,598 pounds, while the total stocks reported by 170 storages on November 1 amounted to 4,664,073 pounds.

The total stocks of **Frozen Pork** reported by 317 storages on December 1 amounted to 26,724,430 pounds, while the total stocks reported by 286 storages on November 1 amounted to 29,258,889 pounds.

The total stocks of **Dry Salt Pork** reported by 428 storages on December 1 amounted to 149,872,010 pounds, while the total stocks reported by 407 storages on November 1 amounted to 114,869,215 pounds.

The total stocks of **Sweet Pickled Pork** reported by 520 storages on December 1 amounted to 200,377,108 pounds, while the total stocks reported by 510 storages on November 1 amounted to 197,348,696 pounds.

The total stocks of **Lard** reported by 548 storages on December 1 amounted to 43,548,013 pounds, while the total stocks reported by 520 storages on November 1 amounted to 37,635,485 pounds.

The total stocks of **Frozen Poultry** reported by 320 storages on December 1 amounted to 49,345,417 pounds, while the total stocks reported on November 1 amounted to 46,206,057 pounds.

The total stock of **Broilers** reported by 187 storages on December 1 amounted to 8,751,472 pounds, while the total stocks reported by 157 storages on November 1 amounted to 5,031,728 pounds.

The total stocks of **Roasters** reported by 179 storages on December 1 amounted to 12,288,257 pounds, while the total stocks reported by 145 storages on November 1 amounted to 5,160,063 pounds.

The total stocks of **Fowls** reported by 202 storages on December 1 amounted to 8,617,455 pounds, while the total stocks reported by 163 storages on November 1 amounted to 3,269,014 pounds.

The total stocks of **Turkeys** reported by 217 storages on December 1 amounted to 3,259,478 pounds, while the total stocks reported by 153 storages on November 1 amounted to 6,485,291 pounds.

The total stocks of **Miscellaneous Poultry** reported by 254 storages on December 1 amounted to 16,428,755 pounds, while the total stocks reported by 211 storages on November 1 amounted to 8,362,448 pounds.

New Food Regulations

Distribution Department of Food Administration.

The distribution department of the Food Administration has charge of all wholesale and retail dealers, as well as brokers, in nonperishable food products, and is particularly concerned to see that licensed commodities under its control are kept "moving in as direct a line and with as little delay as practicable to the consumer"; that they are sold at no more than a "reasonable advance over the actual purchase price" and without regard to their market or replacement value at the time of sale. It also has under its supervision the manufacturing or milling of nonperishable foods, with the exception of canned foods and dried fruits. It will seek to prevent speculation, hoarding, and the exacting of excessive profits on foods, and to this end will closely scrutinize the reports of licensees coming within its control. A campaign is being promoted by this department to get the loyal merchants of the country to pledge themselves to co-operate with the Food Administration and to post conspicuously in their places of business placards to this effect, so that the public may know what merchants are co-operating. It is intended that this campaign shall cover both the wholesale and retail merchants handling food products.

New Flour Regulations.

New regulations prescribing the amount of wheat to be used by millers in manufacturing flour, detailing the manner in which the prices of mill feeds shall be determined and calculated to effect a saving of more than 16,000,000 bushels of wheat during the present crop year, have been announced by the Milling Division of the Food Administration.

The establishment of maximum prices for mill feeds, relative to the cost of wheat, is expected to result in a marked reduction in their price and it is hoped this will operate to lower the price of milk and other dairy products.

The Milling Division's statement says, in part: Increasing difficulties of transportation and the uncertainty of the future emphasize the importance of providing surpluses of wheat against future needs and constitute the reasons for the new regulations.

Prescribing the wheat content of flour, the statement says: No licensee, after December 25, shall use more than 264 pounds of clean wheat in making 196 pounds of 100 per cent flour. From the 100 per cent flour so produced the licensee may, at his option, remove not more than five per cent of clear or low grade flours, none of which may be mixed with or sold as feed. The 95 per cent of the 196 pounds of flour remaining shall not be subject to further separation or division.

Sugar and Flour Sales Restricted.

The following instructions have been issued by Mr. Hoover to the state Food Administrators. They supersede all previous orders.

Sugar should be sold in towns and cities to consumers in two to five-pound quantities; to farm and rural customers in five to ten-pound quantities.

Flour in towns and cities should be sold in eighth to quarter-barrel quantities; in rural and farm communities in quarter to half-barrel quantities.

Any advertisements tending to induce consumers to increase their purchases of flour or sugar during the present national crisis are decidedly against public

policy. This information has already been given you with the suggestion that the press of your state censor their advertisement. We request that you please convey this information to the retail grocers.

Wholesale grocers should not sell sugar in quantities in excess of 1,000 pounds at a time to a retailer. Sugar should not be shipped on back orders, nor without a positive order from the buyer. Wholesale grocers should use every precaution at their command to prevent duplication of sales which may give to a retailer the opportunity to have more sugar than is necessary for conservative distribution.

Bread Sold by the Slice.

To prevent working a hardship on the poor of New York's lower East Side, the United States Food Administration will change its rule prohibiting bakers selling less than a pound of bread to consumers. The weight requirements for baking will not be changed.

It has been the practice to sell bread from big loaves by the penny and two-penny slice to the very poor of New York and other American cities, many of whom can not afford to buy in larger quantities. These people, many of them foreigners, live literally by the biblical statement that "bread is the staff of life"; and they cannot conceive of anything else for their principal article of diet.

This forthcoming change in the bakers' regulations has been announced by the law department of the Food Administration, along with a number of interpretations of the bakers' rules previously issued.

Bread cannot be baked in units of less than 1 pound, but may be baked in any even pounds units above that, or any weight above that into which $1\frac{1}{2}$ may be divided without leaving a remainder. Each unit of a twin loaf or multiple of loaf must meet the weight requirements. It has been ruled that a twin loaf is one made from two separate portions of dough baked in the same pan, and that a multiple loaf is one made from three or more separate portions of dough baked in the same pan.

Lift Corn and Oats Car Embargo.

The embargo declared by the Commission on Car Service at the request of the Food Administration, and effective December 8, on shipment of corn and oats into and through the territory south of the Canadian boundary, east of Wisconsin and Indiana, and north of the Potomac and Ohio rivers, has been taken off by the Commission. Millers and shippers have been requested, however, not to buy or ship more corn or oats than they can at once discharge and not more than required from week to week, until railroad congestion is relieved.

Permits Sent Cannery Limit Their Pack of Beans.

The Food Administration has sent a letter to canners of beans, giving them a permit to can 25 per cent of their pack of white and colored beans, as indicated in the estimates of their requirements up to March, 1918, which were recently submitted to the Administration.

The canning of beans was prohibited pending a survey of the available supply of tin plate. This survey has disclosed that there will soon be released sufficient tin plate to relieve the present situation, but the

Food Administration deems it wise to limit the use of it until there is assurance of an adequate supply of the materials necessary for its manufacture. The present permit will enable the canners to reduce their accumulated stocks and relieve the financial strain. The canners are warned, however, that it should not be taken as a precedent and they are advised to consider the future with caution.

Rules for Packing Butter.

An embargo has been placed on the exportation of butter except to nations associated with the United States in war. The Food Administration requests butter makers and dealers, therefore, to abandon certain types of packages used in shipping butter to the Orient, the Tropics, and other sections outside the selected list of countries. They should use only packages like tubs and boxes that are known to the American trade and will find ready sale in the United States.

Preservatives, flavoring matters, and other materials frequently added to butter for certain export trade should not be used now, since these are not allowable in home trade nor acceptable to our associates. Butter should be put up strictly in accordance with domestic requirements and in compliance with the provisions of the Food and Drug Law.

Rule to Prevent Speculation by Condensed Milk Exporters.

The War Trade Board, at the request of the Food Administration, announced the following additional regulations to govern the exportation of condensed milk:

"No licenses shall be granted for the export of condensed, canned, powdered, or other forms of preserved milk unless there shall have been filed with the Bureau of Exports a certificate of the manufacturer stating that such milk has been sold directly to the exporter and for export purposes, or unless compliance shall be had with such other regulations as may be determined by the Food Administration."

In order to secure a license the exporting concern must procure from the manufacturer and file with the War Trade Board a certificate setting forth that the milk was sold direct to the exporter and for export purposes, and that the raw milk from which the finished product was made was purchased at prices no higher than the prices paid by other buyers in the territory in which the milk manufacturer's plant is situated.

The object of the certificate from the manufacturer is to discourage the operations of speculators who have been purchasing from the retail stores the brands of milk which the manufacturer has set apart for distribution to the American public. The operations of these speculators have created a false condition of the market, and the Food Administration has felt that if the exportation of canned milk could be controlled by the manufacturer, the true export demand and the real demand for home consumption could be accurately determined and a distribution made of such surplus to our allies for civilian as well as military purposes.

Distilled Spirits Further Restricted.

The following regulation governing the use of food materials in the production of distilled spirits has been promulgated by the Secretary of the Treasury under authority of the Food Control Act, and an executive order made by the President on September 2, 1917:

On or after January 1, 1918, no grain other than corn of a quality inferior to the quality of federal grade No. 6 corn shall be used in the production of distilled spirits for any purpose whatsoever: provided, however, that malted barley or rye that is required for conversion of the starch may be used. Any violation of this regulation will subject the offender to the penalty provided by the statute, to wit, a fine not exceeding \$5,000 or imprisonment for not more than two years, or both.

Additions to the Conservation List.

The War Trade Board has made public the following list of commodities in addition to those already published whose conservation is necessary on account of the limited supply and the needs of the United States in its successful prosecution of the war.

Export licenses may be granted, however, for the following commodities when they are destined for actual war purposes or when they will directly contribute thereto, and also in certain unusual cases where such exports will contribute directly to the immediate production of important commodities required by the United States, and in certain other cases where these commodities may be exported in limited quantities without detriment to this country. Exporters are warned, however, that applications for licenses for the goods on this conservation list, as well as for those on the list published earlier, may be refused, and that before committing themselves to sales, they should make their application and procure a license. If this is not done and the goods are shipped before the license is received, then shippers run the risk of unnecessarily congesting the railroad terminals.

To facilitate exports to Canada and Newfoundland, there has been heretofore issued, through the Customs Service, a special license whereby goods have been permitted to enter Canada and Newfoundland without an individual license for each shipment, except in the case of the commodities which the Board has heretofore found it necessary to conserve, and for whose exportation individual licenses have been required, as stated in the several announcements made by the Board from time to time. With respect to the commodities below-mentioned, which are now added to the "conservation list" in accordance with this statement, an individual export license will likewise be required for each shipment of such additional conserved commodities, which is covered by ocean or railroad bill of lading marked "For export" and dated on or after December 2, 1917. This date has been fixed in order to avoid interference with goods in transit.

The commodities now added to the "conservation list" are as follows: beans, cotton seed, corn meal, corn flour, corn grits, corn hominy, rice flour, cornstarch, peanut meal, soya-bean meal, copra, condensed milk (including powdered milk, evaporated milk, and preserved milk of all kinds), canned peas, canned tomatoes, canned corn, canned fish, dried prunes, dried apples, dried raisins, dried apricots, dried peaches, molasses, syrup, glucose, starch.

The attention of shippers is also called to the fact that the following articles have always been included in the conservation list under more general headings, namely: soya-bean oil, lard substitutes, cooking fats, oleomargarine, pork and pork products—fresh, preserved and canned (including, among other things, bacon, hams, shoulders, fatbacks, and sausages), beef and beef products (including canned, preserved, and fresh beef).

Food Purchase Board Formed to Coordinate Buying For Army, Navy, and Allied Governments.

Upon the suggestion of the United States Food Administration, the Secretary of War and the Secretary of the Navy have approved the appointment of a Food Purchase Board to be composed of:

Mr. W. V. S. Thorn, Chief of the Division of Coordination of Purchases of the Food Administration, who represents allied and other controlled buying, or his authorized representative.

Maj. Gen. Henry G. Sharpe, United States Army, Quartermaster General of the Army, or his authorized representative.

Rear Admiral Samuel McGowan, United States Navy, Paymaster General of the Navy, or his authorized representative.

Mr. F. J. Scott, a representative of the Federal Trade Commission.

The Food Purchase Board held its first meeting December 11th in the offices of Mr. Hoover and elected Rear Admiral Samuel McGowan, chairman, and Mr. G. C. Babcock, of the Food Administration, secretary.

The following principles of organization were adopted:

(1) The demand for certain food commodities by the Army, Navy, neutrals, Allies, and civil population is greater than the supply of such commodities.

(2) One of the fundamental purposes of the Food Administration is to protect the above groups from exorbitant prices.

(3) The shortage of supplies and the aggregation of buying in such large units has effectually suspended the law of supply and demand as an effectual regulator of fair prices, and stimulates speculation.

(4) The normal purchase of these commodities in such large units under these circumstances by bid and contract is not only impossible in some cases, but in any event raises the general price level of the country and stimulates speculation.

(5) It is considered that it is vital to the general welfare that these large purchases in certain commodities shall be made by plans of allocation among sellers at fair and just prices. The efforts of the Federal Trade Commission are to be directed to see that cost statements are not inflated.

Regular meetings will be held every Tuesday at 10 a. m. and will co-ordinate the buying of certain

food commodities for the Army, Navy, and the allied governments and other controlled buying.

The functions of the Food Purchase Board are far-reaching, the plan being to so co-ordinate the purchasing as to place it strictly on an official basis and to disturb as little as possible market conditions, having due regard for the interests of the producer and the consumer as well as our fighting forces and those countries which are dependent upon us for their supply of food.

The Food Purchase Board will decide which commodities are to be placed in the category of "allocated purchases," the method of negotiation, and the principles of purchase to be followed in each instance.

Each such trade shall be brought into conference and negotiations and a plan for dealing with such trade agreed to by the parties concerned.

When the plan is agreed to, the Federal Trade Commission shall determine the costs as per the direction of the President and the Food Purchase Board shall recommend prices to the Army or Navy, as the case may be.

No Vegetable Famine This Winter.

The produce trade feels great relief over the latest reports on our vegetable crops issued by the Department of Agriculture. For scarcity last winter, of such staples as potatoes, onions, and cabbage, with unheard-of prices, brought down upon the produce man severe criticism in matters over which he had little control. This year's potato crop is abundant—between four and five bushels for every person in the country, with nearly a bushel of sweet potatoes per capita on top of that. The onion harvest is forecast at thirteen and a half million bushels, compared with less than eight million bushels last year. Three states taken together have a bigger crop than the total national output last year—California, with three and a third million bushels; New York, with two and three-quarter million bushels; and Ohio, with nearly two million bushels. The cabbage crop shows almost a 200 per cent increase over last year. The forecast is for nearly 700,000 tons, compared with 250,000 tons last year. New York State leads with almost four times as much as it grew last year, and 100,000 tons more than last year's crop for the whole country. With plenty of potatoes, onions, and cabbage there can be no recurrence of last year's vegetable famine.

Canned Corn Report.

The tenth annual statistical report of the canning of corn, figures for which were collected by the U. S. Food Administration, is as follows:

	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Iowa	1,085,000	902,000	1,720,000	2,744,000	2,961,000	884,000	1,573,000	1,223,000	1,730,000	2,280,366
Illinois	856,000	1,134,000	2,027,000	2,771,000	2,438,000	1,330,000	1,515,000	2,081,000	1,540,000	2,421,953
Maine	970,000	698,000	1,487,000	1,545,000	801,000	650,000	1,114,000	942,000	782,000	566,498
Ohio	933,000	677,000	936,000	1,412,000	1,376,000	984,000	1,203,000	1,144,000	930,000	1,200,131
Maryland	1,010,000	432,000	970,000	1,637,000	1,517,000	1,023,000	1,364,000	1,609,000	1,448,000	2,001,544
New York	620,000	634,000	1,145,000	1,700,000	1,009,000	393,000	771,000	1,016,000	280,000	257,296
Wisconsin	343,000	422,000	222,000	351,000	519,000	377,000	342,000	208,000	322,000	165,492
Indiana	301,000	405,000	746,000	796,000	1,235,000	785,000	694,000	785,000	797,000	742,491
Minnesota	124,000	78,000	200,000	301,000	321,000	188,000	234,000	121,000	278,000	201,969
Missouri	246,000	240,000	443,000	777,000	658,000	466,000	730,000	722,000	725,000	659,087
Michigan										
Delaware										
Vermont										
Pennsylvania	291,000	165,000	167,000	267,000	274,000	203,000	259,000	273,000	298,000	306,188
All other States.....										
Total	6,779,000	5,787,000	10,433,000	14,301,000	13,109,000	7,283,000	9,789,000	10,124,000	9,139,000	10,802,952

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Foreign Food Regulations

The sale and use of cream was prohibited in Great Britain by government order after December 8, except for infants, invalids and for butter-making, according to information received by the United States Food Administration. The retail price of milk was raised under government authority from 14 to 16 cents per quart in Great Britain on December 1.

Forage conditions in Europe generally are now such that the number of cattle cannot be taken as indicative of the production of milk.

In France the number of cattle has decreased about one-seventh, while the production of milk has decreased from two and one-half to 1 gallon, as compared with pre-war times.

In Vienna the daily supply received prior to the war was 900,000 liters. This has decreased to 200,000 liters.

In Berlin, notwithstanding the national necessity for safeguarding the health of children, the milk supply for children has just been reduced one-third.

The Heavy Hand of Lord Rhondda.

British food control is evidently anything but ineffective. To judge from a recent article in the *London Times*, the hand of the Food Controller is particularly heavy on British bakers who use undue amounts of sugar in their pastry. Four Glasgow bakers were reported to have recently been in court for using more

than the permitted 15 per cent of sugar in their cake, and John Dalziel & Co. (Limited), Alexander Currie & Sons (Limited), James Craig (Limited) and Mackenzie & Sons were each fined £2.

In the case of Messrs. Currie, where the percentage of sugar in a sponge cake was 19.6, a partner of the firm explained that they had the article made up to a recipe of their own which showed 14.7 per cent of sugar, and that the baker might have made a mistake. On behalf of Messrs. Craig, in whose premises was found a sponge cake with 20.3 per cent of sugar, it was stated that respondent was one of a committee of bakers who had drawn up a number of model recipes which conformed to the regulations. The man who usually made up these recipes was off ill, and another had taken up his work, when the contravention took place. Regarding Messrs. Mackenzie's case, it was stated that a sponge cake found to contain 5.4 per cent excess of sugar was not baked by the firm.

In Dunoon Sheriff Court a heavy penalty under the regulations for the distribution of sugar for home-grown fruit was imposed upon a farmer of Clunitis, Innellan, who admitted having applied for 300 pounds of sugar—150 pounds for soft fruit and 150 pounds for stone fruit grown in his garden. By this action he had deprived 280 people of their weekly supplies.

The Sheriff characterized the offense as serious, and imposed a fine of £20 or 30 days, with 14 days to pay.

In Rothesay Sheriff Court four householders from different parts of Arran admitted offenses under the sugar restriction order. They had applied for and obtained more sugar than they were entitled to for fruit preserving. In one case 112 pounds was obtained, and in another case, where a double application was made, 168 pounds and 100 pounds were obtained. In three of the cases a fine of £3 or 14 days was imposed, and in a fourth case a fine of £5 was imposed or 14 days.

THERE IS

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INSURANCE, ECONOMY
AND CONVENIENCE IN



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Let every paper maker, jobber, dealer, and salesman in American **get behind this!** We'll help to drive out waste—perform a patriotic service to our fellow men—and incidentally accelerate sales.



British Food Administration to Control Oilseed.

The British food ministry has ordered all factories engaged in crushing oils from seeds, nuts, and kernels to be placed at the Controller's disposal, all oil cakes and meals on hand November 30, and all stocks produced after that date. It has also taken possession of all babassu seed, castor seed, copra, cotton seed, sesame seed, groundnuts, hempseed, illipe, kapok seed, linseed, mowrah seed, niger seed, palm kernels, poppy seed, rapeseed, shea nuts, soya beans, sunflower seed in stock and imported thereafter, except in the case of holders of less than 5 tons. All hardened fats manufactured by hydrogenation are placed at the disposal of the Food Controller.

Canada Adds to License Requirements.

Following the Order in Council of November 15 requiring licenses for exportation of foods and feeds to countries other than the United Kingdom, British possessions and protectorates, a more recent order prohibited the exportation of the following goods to the United Kingdom, British possessions and protectorates, namely: wheat, rye, barley, oats, corn, rice, beans, peas, cotton seed, wheat flour, peanut meal, soya-bean meal, copra, starch sugar (except in such quantities as may be shipped to members of military and naval forces overseas under the regulations of the Postmaster General's department), molasses, syrup, corn meal, corn flour, corn grits, corn hominy, rice flour, cottonseed cake, cottonseed meal, rape-seed oil, soya-bean oil, copra oil, oleo oil, lard substitutes, cooking fats, cheese, poultry, eggs, canned tomatoes, glucose, corn oil, cottonseed oil, peanut oil, palm oil, olive oil, canned salmon, canned fish, oleomargarine, pork products (including bacon, shoulders, fatbacks, hams, sausages, fresh pork), butter, condensed milk (including powdered evaporated milk), beef products (including canned, preserved and fresh beef), canned peas, canned corn, canned sardines, dried fruit (including prunes, apples, raisins, apricots and peaches). Provided, that licenses permitting the exportation of the goods herein described may be issued by the Minister of Customs, such licenses to be countersigned by the Food Controller of Canada.

Hams and Bacon for France.

The importation of hams (plain, boned and rolled, or cooked) and bacon into France is now subject to the obtaining of a special license for each shipment, such license to be granted by the French authorities before orders for shipment may be sent abroad. Should such goods be shipped to France before a license has been granted for the admission thereof the authorities may either requisition them or order them to be reshipped out of the country.

Fats from Bones.

To meet the scarcity of fats, the Germans have developed methods of collecting and using bones from households, public eating places and butcher shops. The *Berliner Tageblatt* describes the following various uses to which the bones may be put:

Fresh bones are subjected to a pressure of four to six atmospheres in autoclaves, and fat for food purposes is thus extracted to the extent of 14 to 16 per cent of the raw bones. From cooked bones, if still fresh, 6 to 8 per cent of edible fat is extracted. The jelly remaining is worked into extract of beef or gravy cubes. The bones are then used for fodder and manure. From bones no longer fresh and unfit for the above purposes a fat for technical purposes is extracted amounting to 8 to 10 per

cent. The bone brew and bones are used for fodder and manure. The fat is used in glycerin, oleine, stearin, and pitch. Recently, by a special refining process, it has been possible to use this fat also for food purposes. A third class of bones has the fat extracted in an open boiler by a process not destroying the bones, which are then used for the manufacture of buttons, knife handles, and other bone goods. Neat's-foot oil is the extract from the fresh feet, which again is used in making torpedo-lubricating oil. The jelly waste, as far as possible, is used for human consumption.

Substitute Foods in Germany.

News comes by way of Switzerland that 7,000 substitutes for foods of various kinds are advertised and more or less used in Germany. It is not easy to understand how this is possible and hosts of these substitutes must be preparations substantially similar in their composition but offered under different names. As the object of all of them is to meet a food shortage with something that will take its place, they are all of less value than the edibles they attempt to supplant. Hence it is no surprise to learn from reports just issued by insurance companies in Germany that malnutrition is second only to military service as the cause of deaths. These are vastly in excess of births, and leading medical men of the empire are frank in saying that this lack of nutriment if long continued means the elimination of the weakest, and is already causing diseases which followed in the wake of famine in early periods of history.

Food Fines as "Overhead."

It is said that Germany now has 892 separate imperial laws, orders and proclamations dealing solely with the food supply and its control. There are so many prosecutions for infractions of these laws that it is said fines have become almost a part of the overhead cost of doing business in Germany.

Spain Takes Steps to Assist Agriculture.

Development of Spanish agriculture and connected industries is sought in a law recently adopted in Spain. Among the industries specifically mentioned in the law as being eligible for the benefits to be granted are the following:

The production of seeds and other products not hitherto obtainable in Spain, and the handling of such produce; the export trade in cattle, wines, oils, fruits and Spanish agricultural produce in general, under the management of growers' trusts; the manufacture of fertilizers and agricultural machinery; the manufacture of chemical products.

Provision is made in the law for the above industries to receive state support, which may take the form of exemptions from or reductions of taxes and duties, or customs protection, financial assistance, or otherwise. Bounties may also eventually be granted in certain cases where a surplus for export is produced, but it is not proposed to protect any industry in such a way as to give it an unfair advantage over similar industries already established.

Two New Whale Canneries Planned for Pacific Coast.

According to information received by the Bureau of Fisheries, Department of Commerce, a whaling company on the Pacific Coast is planning to erect two canneries to be operated next season, each with a capacity of 30,000 cases. The same company will also operate a cold-storage plant for supplying fresh and frozen whale meat.

Quality, Purity and Cleanliness

A trinity of food manufacturing virtues you are guaranteed when you buy

WARD'S BREAD

Made in modern sanitary bakeries from highest grade materials and by the most advanced and scientific methods known to the industry.

WARD BAKING CO.

Whiter—Sweeter—Lighter Bread and Cake

The first essential of success in home baking is to employ a leavener that is pure, thorough and dependable—one that raises evenly, and gives the bread and cake the right texture, and appetizing appearance—and makes them easily digested. The purity, uniform strength and perfect keeping qualities of

Rumford

THE WHOLESOME
BAKING POWDER

insures whiter, sweeter and lighter cake and bread—it raises the baking just right, and adds to the nutritive value, as it restores phosphatic elements equivalent to those which fine wheat flour loses in the process of milling.

Every Housewife, Dietitian, Domestic Science Teacher and Lecturer should have a copy of "Rumford Dainties and Household Helps." We will be pleased to send it Free upon request.

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Packer and Manufacturer
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"EDDYS" BRAND

**Canned Foods,
Jellies, Preserves,
Plum Pudding,
Sauces, Table Delicacies,**

and

**PRIDE OF THE FARM
Tomato Catsup**

**Bridgeton, N. J.
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Carnation Milk

Is Safe Milk

Carnation Milk is fresh, clean, sweet cows' milk, evaporated to the consistency of cream, sealed air-tight in cans and *sterilized* to keep it pure and safe. Nothing is taken out but water; nothing whatever is added.

You will find Carnation Milk most satisfactory for cooking and baking, for coffee, ice cream, etc. It is the only milk supply your home needs.



Free Recipe Book

"The Story of Carnation Milk," our free, illustrated recipe book, contains over 100 recipes for plain and fancy dishes. Sent free to you upon request. Carnation Milk Products Company, 765 Stuart Building, Seattle, Wash.

Remember—Your grocer has it!

"From Contented Cows"

Food Saving in Public Eating Places.

In New York City for the second week of November, according to the U. S. Food Administration, hotels and restaurants saved 232,245 pounds of meat—beef, pork and mutton—and 121,554 pounds of wheat flour. In October, savings in Massachusetts amounted to 1,282,840 pounds of meat and 914,040 pounds of flour. November reports from Nebraska show a saving of 422,822 pounds of meat and 294,419 pounds of flour. Colorado in the same month saved 64,780 pounds of meat and 39,585 pounds of flour; Michigan, 134,744 pounds of meat and 80,674 pounds of flour; Arkansas, 20,240 pounds of meat and 14,798 pounds of flour; Arizona, 31,780 pounds of meat and 14,907 pounds of flour. One railway dining car service alone saved in a single month 12,541 pounds of meat. Combined dining car services saved 469,508 pounds of meat and 238,098 pounds of flour. One big hotel in a single month saved 30,295 pounds of meat and 24,402 pounds of flour.

These reports represent a greater per capita reduction than would be shown on their face. Especially in the East, there have been heavy increases in the number of meals served in public eating places. These savings are determined by comparing the consumption with figures for the corresponding period in 1916. In spite of material increases in the number of meals served, there has been a decided reduction in the total amount of food consumed.

Fully 90 per cent of the hotel proprietors and restaurateurs of the country have pledged their support to the Food Administration. All who are co-operating with the Administration are observing the wheatless and meatless days, and by every other possible means encouraging the conservation of our food supplies.

Even if Massachusetts' savings in November were no greater than in October, and if New York's report for a week is used in establishing an estimate for the month, we get from these few reports the following savings for November: 1,701,716 pounds of meat and 965,383 pounds of wheat flour. Three states combined show a sugar saving of 249,928 pounds.

It is almost impossible to approximate the percentage of savings for the public eating places of the country as a whole. One big hotel reported a weekly flour saving of almost 50 per cent. The same establishment has reported a saving of more than 40 per cent in meat.

The elimination of waste has been far greater than the actual savings would indicate. Hotel and restaurant men have reported that there is now practically no waste in their kitchens. Everything is served or saved; even the entrails of chickens are sold to soap makers. Garbage cans are being starved, getting their just deserts but no more. Table scraps that cannot be used for food are stored in barrels and sold, part being fed to hogs, and the rest used in making soap and fertilizer.

Sherer Counter Patents.

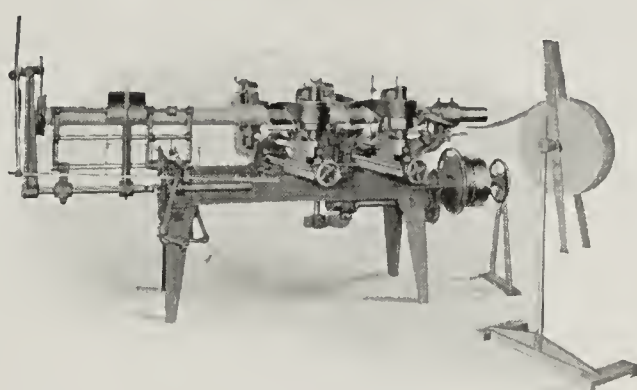
That it is safer to originate than to imitate has been proved, says the *Grocers' Advocate*, in the case of the Wahlfeld Mfg. Co., of Peoria.

They built some counters which so closely resembled the Sherer Counter in appearance that the uninitiated would be led to believe they saw the genuine. Some of the patented mechanical features of the Sherer Counter were used in their entirety in these imitation counters.

The ubiquitous Sherer salesman discovered the imitation counters and when the seriousness of the situation was presented to the Messrs. Wahlfeld, they promptly admitted their error and made satisfactory settlement for the offense—including promise to be good in the future.

Sherer Counters are protected by many patents. Both the maker and the user of an infringing imitation are liable under the law.

ROUND PAPER CAN MACHINERY



SAMUEL M. LANGSTON COMPANY

CAMDEN, N. J., U. S. A.

CANADIAN FAIRBANKS-MORSE CO., Agents for Canada

A Mysterious Mortality of Fishes in the Gulf of Mexico.

About October 3d of last year, in the vicinity of Baco Grande, Florida, a large number of dead fish began to float in on the tide. At first these mainly consisted of what are known locally as "red-mouthed grunts," but during the day thousands of all the known species of the locality drifted in, as well as many species that were unknown, and could not be identified. At the same time the air was filled with an odorless, but exceedingly irritating gas, which seemed to have an effect similar to chlorine on the throat and lungs. The beaches were covered with dead fish, and they piled up in windrows that emitted an almost unbearable stench. Investigation showed no pathological condition in the fish. No fungi or parasites could be discovered. The water appeared to be normal, although some observers believed that the death of the fish occurred in "dark streaks" in the gulf. Harden F. Taylor of the Bureau of Fisheries visited the locality, and endeavored to discover the cause of the mysterious mortality, which lasted, at intervals, for almost two months. In considering the various possible causes of sudden mortality of great numbers of fish, he believes the most probable explanation in the present case to be earthquake shocks of low intensity. He says:

It seems possible that the incidental effects of earthquakes might explain the death of the fishes. For instance, gases are sometimes emitted along with the shock. The following quotation from Darwin pertains to this aspect of the subject:

In Capt. Fitz Roy's excellent account of the earthquake (Chile, 1833, Jan. 20), it is said that two explosions, one like a column of smoke and another like the blowing of a great whale, were seen in the bay. The water also appeared everywhere to be boiling; and it became black and exhaled a most disagreeable sulphurous smell. These latter circumstances were observed

in the Bay of Valparaiso during the earthquake of 1822; they may, I think, be accounted for by the disturbance of the mud at the bottom of the sea containing organic matter in decay. In the Bay of Callao during a calm day I noticed that as the ship dragged her cable over the bottom its course was marked by a line of bubbles.

Prof. J. B. Woodworth, of the Harvard seismographic station, sets forth, in a letter of some length, a possibility which has not been considered, and which seems worth investigating. The substance of his letter is as follows:

Previous to the cases of 1908 and 1916 there are no satisfactory records of seismic activity in the region concerned. It may be quite possible, however, that unobserved shocks of low intensity could explain the mortality; that occluded gases, resulting from the decay of sedimentary organic matter, are released by a disturbance of the sediment, under which circumstances the occluded gases would rise into the water, dissolve, and interfere with the life processes of fishes. Or, at the edge of the rather wide continental shelf in this region, a seismic disturbance of low intensity might cause accumulated sediments to slide off into abyssal water, similarly releasing occluded gases and also mixing up the mud with the water. It is known that microseisms (as Prof. Woodworth terms them) are radiated from this locality, and it is believed by some that they are due to the West Indian cyclonic storms.

This seems to be the most promising hypothesis. It might be expected that the water flowing into this region carries a large amount of organic matter leached from the abundant Florida vegetation and held in colloidal solution; that this organic matter, on striking sea water heavily charged with lime is flocculated and falls to the bottom on the uncommonly wide expanse of continental shelf in this region; then as it accumulates on the bottom it decays anaerobically, yielding methane, hydrogen sulphide, possibly carbon monoxide, and other gases; that these gases, as generated, are confined by the pressure, increasing sediment, and, perhaps by the limestone crust which appears to cover the bottom; that an earthquake shock, even an unnoticeably mild one, would so disturb the sediment, or break the crust, as to release the occluded gases, and that these gases work, by various physiological and chemical means, the injury to fishes. These organic gases, being rare in sea water, would never be detected by the ordinary analyses.

Acid Calcium Phosphate
 Acid Ammonium Phosphate
 Liquid Acid Phosphate
 Baking Powder Materials
 Phosphoric Acid
 Epsom Salts U. S. P.
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THIS product is taxed and regulated the same as animal oleomargarine.

We oppose the former and positively favor the latter. We want this product sold on its merits for just exactly what it is. We refuse to sell moonshiners. This product is sold only in one, two and five pound cartons. Our business has grown rapidly on new, progressive lines.

The Nucoa Butter Company
 CHURNERS

Sales Department, 10 Bridge Street, New York

Government Publications.

The States Relations Service of the Department of Agriculture has recently published the following Farmers' Bulletins:

Bulletin 808, How to Select Foods: I. What the Body Needs. March, 1917. A paper by Caroline L. Hunt and Helen W. Atwater, scientific assistants, office of Home Economics, telling what the body needs to obtain from its food and how the various food materials meet these needs.

Bulletin 817, How to Select Foods: II. Cereal Foods. May, 1917. A paper, illustrated, by the same authors as above, discussing the large and beneficial share of cereals in wholesome and inexpensive diets.

Bulletin 824, How to Select Foods: III. Foods Rich in Protein. July, 1917. A paper by the same authors as above, pointing out the necessity for protein foods, and, since these are the more expensive common foods, the importance of knowing which to buy.

Bulletin 807, Bread and Bread Making in the Home. April, 1917. An illustrated recipe pamphlet by Caroline L. Hunt, scientific assistant, office of Home Economics, and Hannah L. Wessling, assistant chemist, Bureau of Chemistry. Different methods and why.

Bulletin 839, Home Canning by the One-Period Cold-Pack Method Taught to Canning Club Members in the Northern and Western States. June, 1917. Illustrated recipes and directions for canning by this method, by O. H. Benson, agriculturist in charge of boys' and girls' extension work in the Northern and Western states.

Bulletin 853, Home Canning of Fruits and Vegetables as Taught to Canning Club Members in the Southern States. July, 1917. Illustrated recipes and directions, by Mary E. Creswell and Ola Powell, assistants in home demonstration work, office of extension work in the South.

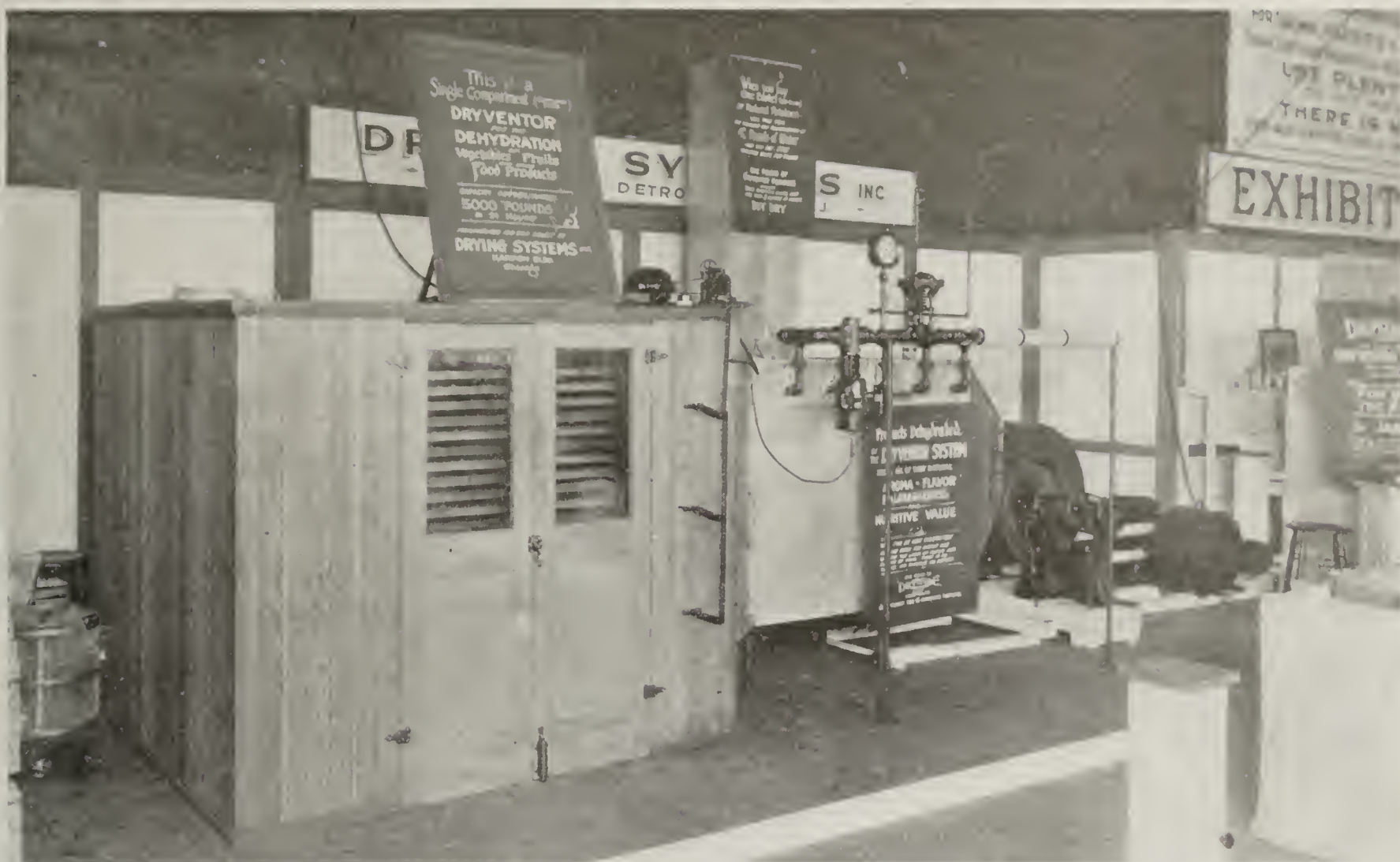
Bulletin 871, Fresh Fruits and Vegetables as Conservers of Other Staple Foods. July, 1917. Recipes and bills of fare applying the principles that fruits and vegetables can be used to a greater extent without lessening the food value or attractiveness of the diet, by Caroline L. Hunt, scientific assistant, office of Home Economics.

Bulletin 881, Preservation of Vegetables by Fermentation and Salting. August, 1917. By L. A. Round, bacteriologist, Bureau of Chemistry, and H. L. Lang, scientific assistant, office of Home Economics. One diagram. A paper giving methods of preserving, and recipes for application, not to take the place of canning and drying, but to add to the variety of the diet.

Bulletin 841, Drying Fruits and Vegetables in the Home, with Recipes for Cooking. June, 1917. Principles, methods, equipment and recipes.

The Department of Agriculture has published the following additional Bulletins:

Contributed by the Bureau of Chemistry, under date of June 27, Bulletin No. 538, Shrimp: Handling, Transportation, and Uses. By Ernest D. Clark, investigator in fish and fish products, and Leslie MacNaughton, formerly assistant in fish investigations, and prepared under the direction of M. E. Pennington, chief, Food Research Laboratory. Illustrated. A paper to show how shrimp, raw or cooked, can be shipped to distant markets without using preservatives, and arrive in good condition.



THE DRYVENTOR AT THE CHICAGO PATRIOTIC FOOD SHOW

The Market for DEHYDRATED FOOD PRODUCTS Is Growing Rapidly

The **DRYVENTOR**, as pictured above, created a sensation at the Chicago Patriotic Food Show by clearly demonstrating the remarkable possibilities of dehydration as a means for preserving perishable food stuffs such as onions, potatoes, carrots, cabbage, turnips, spinach, other vegetables, fruits and berries.

An enterprising company is serving itself and the public at large by installing this **DRYVENTOR** in Chicago. The products are now on sale under the trade name

DEHYDRATED
DRYMADE
FOOD PRODUCTS

Dehydrated foods, produced by the **DRYVENTOR SYSTEM**, besides being economical, convenient, and of high quality, will find a ready market because the intelligent housekeeper understands that the development of dehydration as an industry means year-round equalization of prices, preservation of surplus production for later use, fresh vegetables and fruit at all seasons, and decreased handling and transportation expense. She realizes, also, that these things will benefit her directly and materially.

An interesting booklet, describing the **DRYVENTOR**, and explaining the growing importance of dehydration to the grower and to those interested in the marketing of perishable vegetables and fruit, will be sent upon request.

DRYING SYSTEMS, Inc.
KARPEN BUILDING, CHICAGO

TIN and FIBRE CONTAINERS

FOR

Foods, Drugs, Oils

Infinite Variety
Large Capacities
Prompt Deliveries

American Can Company

Chicago New York San Francisco

WITH OFFICES IN ALL LARGE CITIES

WM. J. MOXLEY'S

"SPECIAL" OLEOMARGARINE

The Taste Is
the Test



Where
Quality and
Economy Meet

Gives better satisfaction than 75 per cent of butter used. Cost one-third less. Try it and be convinced. Order a package from your dealer.

Churned by

WM. J. MOXLEY, Inc., Chicago

Contributed by the Bureau of Animal Industry, Bulletin No. 563, The Determination of Bacteria in Ice Cream. June 19, 1917. A professional paper by S. Henry Ayers and W. T. Johnson, Jr., of the Dairy Division.

Contributed by the office of Markets and Rural Organization, Bulletin No. 477, Marketing and Distribution of Strawberries in 1915, under date of April 2, 1917. By O. W. Schleussner and J. C. Gilbert, assistants in market surveys. Charts, maps, and diagrams. Report based on observations by the authors at shipping points, and by representatives of the office in the markets.

The Bureau of Fisheries of the Department of Commerce issued recently Document No. 839 on Pacific Salmon Fisheries, by John N. Cobb, Appendix III to the report of the U. S. Commissioner of Fisheries for 1916. This is a revision of Mr. Cobb's report (Bureau of Fisheries Document No. 751, 180 pp.) of 1911. Material has been added, and some of the chapters remodeled and enlarged. Statistics have been brought up to date of January 1, 1916.

Publications of United States Department of Agriculture Relating to the Use of Fats in the Home.

AVAILABLE FOR FREE DISTRIBUTION.

- Meats: Composition and Cooking (Farmers' Bulletin 34.)
- Beans, Peas and Other Legumes as Food. (Farmers' Bulletin 121.)
- Preparation of Vegetables for the Table. (Farmers' Bulletin 256.)
- Use of Milk as Food. (Farmers' Bulletin 363.)
- Care of Food in the Home. (Farmers' Bulletin 375.)
- Economical Use of Meat in the Home. (Farmers' Bulletin 391.)
- Care of Milk and Its Use in the Home. (Farmers' Bulletin 413.)
- Cheese: Economical Uses in the Diet. (Farmers' Bulletin 487.)
- Mutton and Its Value in the Diet. (Farmers' Bulletin 526.)
- Farm Buttermaking. (Farmers' Bulletin 541.)
- Use of Corn, Kafir, and Cowpeas in the Home. (Farmers' Bulletin 559.)
- Corn Meal as a Food and Ways of Using It. (Farmers' Bulletin 565.)
- Production of Clean Milk. (Farmers' Bulletin 602.)
- Food for Young Children. (Farmers' Bulletin 717.)

FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C.

Household Tests for the Detection of Oleomargarine and Renovated Butter. (Farmers' Bulletin 131.) Price, 5 cents.

Meat on the Farm: Butchering, Curing and Keeping. (Farmers' Bulletin 183.) Price, 5 cents.

Bouillon Cubes: Their Contents and Food Value Compared with Meat Extracts and Home-made Preparations of Meats. (Department Bulletin 27.) Price, 5 cents.

Digestibility of Some Animal Fats. (Department Bulletin 310.) Price, 5 cents.

Fat Testing of Cream by Babcock Method. (Bureau of Animal Industry Bulletin 58.) Price, 5 cents.

Manufacture of Butter for Storage. (Bureau of Animal Industry Bulletin 148.) Price, 5 cents.

Normal Composition of American Creamery Butter. (Bureau of Animal Industry Bulletin 149.) Price, 5 cents.

Factors Influencing Change in Flavor in Storage Butter. (Bureau of Animal Industry Bulletin 162.) Price, 10 cents.

New Method for Determining Fat and Salt in Butter, Especially Adapted for Use in Creameries. (Bureau of Animal Industry Circular 202.) Price, 5 cents.

Detection of Phytosterol in Mixtures of Animal and Vegetable Fats. (Bureau of Animal Industry Circular 212.) Price, 5 cents.

The delicious economy of Cottolene cooking

A shortening that is apparently cheap by the pound is often expensive when it comes to actual use.

Many careful housekeepers have found that Cottolene goes very much farther than other shortenings which they had been using. Many report that they get the best results by using one-third less. That is because wholesome Cottolene sets the highest possible standard for purity and *richness*.

When you bake with Cottolene and taste the cookies, cakes, puddings, pies and biscuits, you make a still more welcome discovery.

This:

That all these good things have a perfectly delicious *flavor*.

When used for frying, wholesome Cottolene has, too, a way of sealing *in* the flavor. For instance, potatoes fried in Cottolene are crisper and lighter than potatoes fried in other commonly-used cooking fats. They are more mealy inside.

That is because Cottolene can be brought to a higher *even* temperature than other shortenings.

Recipe for GINGERBREAD

- 1 cup New Orleans molasses;
- 2 scant tablespoons Cottolene, melted;
- 1 cup boiling water;
- 1 level teaspoon soda;
- 3 cups flour;
- 1 tablespoon ginger.

Dissolve soda in tablespoon boiling water and add it to molasses; then add the melted Cottolene, boiling water, ginger and flour. Beat until smooth and bake in a moderate oven about 30 minutes.



Cottolene

"Makes Good Cooking Better"



THE **W** shaped label, bearing the words Wilson & Co., means far more than a label on our merchandise. It is the assurance that the finest meats, the best of selected vegetables and the purest of foods are used in the preparing of this line of products.

In asking you to buy and sell these goods we are offering you food products prepared with the same scrupulous care and attention that your mother would take.

"This mark **WILSON & CO.** your guarantee"

Chicago, New York, Oklahoma City, Kansas City, Los Angeles
The U. S. Government certifies to the purity and wholesomeness of Wilson & Co.'s products. Look for the Government Inspection Mark

Grocers Advertise Whale Meat.

A group of twelve retail grocers in Vancouver, B. C., recently conducted a co-operative advertising campaign in that city to educate the public to the desirability of whale meat, which, the headline of one advertisement stated, "is more nutritious than beef and just as wholesome." The fact is pointed out that the whale is captured many miles at sea, away from all shore contamination, in perfectly clear blue water. The particular whale from which the meat was offered in this advertisement, fed exclusively on live shrimps. Several recipes for preparing whale steak, pot roast of whale, and curried whale were published. The meat sold at ten cents a pound.

Bakers Work on New Bread Formulas.

Co-operative experiments to develop new types of bread, containing substitutes for wheat flour in reasonable proportions, and also reduced proportions of shortening and sugar, are being conducted by the baking trade of the country with the assistance of Dr. Benjamin R. Jacobs, baking expert of the United States Food Administration. Matters of formula and method are being left to the bakers themselves as much as possible. The baking industry of this country embodies much expert technical knowledge. Its operations are often on a very large scale. It has a large investment in complicated machinery. It is scattered over an enormous area, with a wide range of conditions in raw material and consuming demand. Dr. Jacobs is receiving new bread formulas and other technical results of great value which are being promptly given to the baking trade through the technical press.

Ten Shiploads of U. S. Grain Diverted to Starving Finns.

The Food Administration and the War Trade Board have released 40,000 tons, or about 10 shiploads, of oats and corn to the starving people of Finland. As soon as Dr. Kaarl Ignatius, special commissioner for Finland, can get his ships loaded, the foodstuffs will be started to Sweden on their way to the Finns.

The Finnish people, according to Dr. Ignatius, are in a desperate condition. Ordinarily they raise only one-half of the foodstuffs that they consume. They import the other half from Russia chiefly. A July frost killed their entire crop last summer and the disorganization of Russia made it impossible to obtain any Russian cereals. The Finnish Government has already paid \$12,000,000 to Russia for grain which has never arrived in Finland because the starving Russian people looted the trains before they reached the border.

For humane reasons, the Food Administration has released grain for Finland out of scanty stores that are more than needed by America's associates in the war, but the War Trade Board is sending one of its agents from Sweden to investigate conditions among the Finns and to make sure that America's assistance will not accrue to the benefit of Germany.

"By supporting Russia in the war," Dr. Ignatius says, "the Finns have been stripped of their raw materials of manufacture. Their industries have been disorganized in order to make munitions. Their finances have been impoverished by the payment of millions a year to the Russian Government and by the receipt of worthless paper rubles in payment for their goods. They have had no coal for three years and have been burning wood."



Purity of essential ingredients.

Constant U. S. Government Supervision

Strict compliance with all State Pure Food Laws

Rigid sanitary rules in every step of production.

These rules are fully appreciated by

MORRIS & COMPANY,

which sincerely endeavors to merit the confidence of the ever-increasing patronage given their choice oleomargarine

"MARIGOLD"

The National Bread Spread.

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E. St. Louis Chicago Kansas City
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Branches in nearly all large cities

Jiffy-Jell

For Desserts and Salads

True Fruit Flavors--In Glass Vials

Fruity--Economical

Jiffy-Jell is a new type of quick gelatine desserts and salads.

Its great distinction lies in liquid flavors, made from the fresh ripe fruit itself.

These flavors come sealed in bottles, so they keep their freshness until used. There's a bottle in each package.

The flavors are highly concentrated. For instance, half a ripe pine-



apple is used to flavor one

Jiffy-Jell dessert. So Jiffy-Jell desserts and salads taste like crushed fruit dainties.



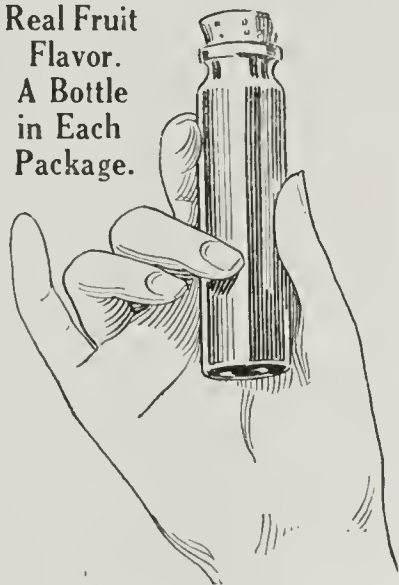
Jiffy-Jell will be served at least five times as often as old-style gelatine desserts. It places real fruity dainties at one's instant command. And they taste as fruit tastes in its season.

Jiffy-Jell comes in ten flavors—Strawberry, Raspberry, Loganberry, Cherry, Pineapple, Orange, Lemon, Coffee, Mint, and Lime. Two packages cost 25 cents.

WAUKESHA PURE FOOD CO.

WAUKESHA, WIS.

Real Fruit
Flavor.
A Bottle
in Each
Package.



A sealed bottle of liquid fruit flavor is in each Jiffy-Jell package. All fruit flavors are made direct from the fresh ripe fruit itself.

Jiffy-Jell needs no additions—no sugar, no color, no flavor. Simply add boiling water. When partly cooled, add the flavor from the vial.

One package—which costs 12½ cents—will serve six or eight people. No other form of attractive dessert can be served at such trifling cost.

Lime Jiffy-Jell, flavored from lime fruit, makes tart, zesty salad

jell. Mix it with the salad, or mix the salad articles into the jell.



One may serve in this way meats or vegetables which might otherwise be wasted. Jiffy-Jell also saves flour-made desserts.



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DEPARTMENTS: Food, Commercial, Medical, Milling and Baking.
Expert Staff of Consultants. Court and Medico-Legal Work.

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One St. Louis Paper Can & Tube Co.
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SOMETHING NEW SAMPLES GRATIS

GRANULATED BORIC ACID

Will dissolve more readily than any form hitherto introduced. When ordering, specify

20 MULE TEAM GRANULATED BORIC ACID
U. S. P.

PACIFIC COAST BORAX COMPANY

New York

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DR. PRICE'S VANILLA

Is Made From the

Finest Mexican Vanilla Beans

The same high quality is found in Price's

Lemon, Orange, Raspberry and Strawberry

PURE FRUIT EXTRACTS

Price Flavoring Extract Co.

CHICAGO, ILL.

Bumper World Crops of Corn, Oats, Potatoes and Sugar Beets.

A cablegram to the Bureau of Crop Estimates, United States Department of Agriculture, from the International Institute of Agriculture, Rome, Italy, gives the 1917 production of various crops as follows:

The production of wheat in Denmark, Spain, France, Great Britain, Ireland, Italy, Luxemburg, Norway, Holland, Sweden, Switzerland, Canada, United States, India, Japan, Algeria, Egypt and Tunis is 1,864,000,000 bushels, or 96.1 per cent of the 1916 crop in these countries and 85.1 per cent of a five-year average 1911-1915.

The 1917 production of barley in Denmark, Spain, France, Ireland, Italy, Luxemburg, Norway, Holland, Sweden, Switzerland, Canada and the United States is given as 160,000,000 bushels, or 96.2 per cent of the 1916 crop of these countries and 91.7 per cent of a five-year average 1911-1915. The 1917 production of barley in these countries and in Great Britain, Japan, Algeria, Egypt and Tunis is 844,000,000 bushels, or 100.1 per cent of the 1916 crop in these countries and 95.9 per cent of a five-year average 1911-1915.

The 1917 production of oats in Denmark, Spain, France, Ireland, Italy, Luxemburg, Norway, Holland, Sweden, Switzerland, Canada, United States, Great Britain, Algeria and Tunis is given as 2,740,000,000 bushels, or 112.1 per cent of the 1916 crop in these countries and 113.4 per cent of a five-year average 1911-1915. The 1917 production of corn in Spain, Italy, Switzerland, Canada, United States and Japan is given as 3,284,000,000 bushels, or 121.4 per cent of the 1916 crop in these countries, and 113.0 per cent of a five-year average 1911-1915. The 1917 production of rice in Spain, Italy, United States, Japan and Egypt is 21,319,000,000 pounds, or 80.3 per cent of the 1916 crop in these countries, and 83.7 per cent of a five-year average 1911-1915.

The 1917 production of potatoes in England, Wales, Ireland, Italy, Luxemburg, Norway, Holland, Sweden, Switzerland, Canada, United States and Japan is put at 1,119,000,000 bushels, or 136.4 per cent of the 1916 crop in these countries, and 114.8 per cent of a five-year average 1911-1915.

The 1917 production of sugar beets in Holland, Sweden, Switzerland, Canada and the United States is given as 8,992,000 tons, of 2,000 pounds, or 92.7 per cent of the 1916 crop in these countries, and 103.1 per cent of a five-year average 1911-1915.

Protecting Meat Supplies for Soldiers and Sailors.

Redoubled precautions to prevent food made unwholesome by adulteration or through tampering by enemies from reaching American soldiers and sailors are being taken by the meat-inspection service of the Department of Agriculture. Every pound of meat or meat products which reaches the mess tables of Uncle Sam's fighting forces is inspected at least twice—first at the establishment where it is packed or prepared and finally by trained inspectors of the Department stationed at the camps.

All meats and meat products for the Army and Navy are obtained only from inspected establishments, and every consignment must bear the Government stamp, "Inspected and passed." This stamp means that every step in the process of preparing the meat for consumption, from the time the animal is killed up to and including the time it is placed in the cans and sent out from the establishment where it is packed, has been under the constant supervision of trained inspectors of the Department. At the camps all products are reinspected, and laboratory analysis of samples show if the foods have been made injurious by tampering.

Twenty-six hundred inspectors are stationed throughout the country at establishments which prepare meat and meat-food products for interstate and foreign commerce. These inspectors personally examine the live animals, the carcasses and all parts thereof at the time of slaughter. They continue to

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inspect and to reinspect the meat and meat products throughout the different stages of preparation. All meat which is unsound, unhealthy, unwholesome, and otherwise unfit for food is condemned and destroyed in the presence of the inspectors. Some 70 inspectors of the service have been detailed to the various military and naval camps.

Sugar Price Goes Higher.

The Food Administration has announced that a raise of 10 cents per 100 pounds on the beet-sugar basis has been authorized. This raise is from \$7.25 to \$7.35 and went into effect December 12. It should not, however, cause any advance in the present retail price, and jobbers and retailers are required to sell their stocks on hand on the old basis.

The price, \$7.35, is the figure at the basic centers for sugar, which are New York, San Francisco, and New Orleans; the raise is in view of the fact that the price agreed upon with the representatives of the Cuban Government will reflect a price for refined sugar of not less than \$7.35 on which the above price was based. Another slight advance may be declared when the Cuban freight rates are finally adjusted.

First Reports on War Bread Savings.

Difficulty in getting the necessary substitutes for wheat flour will be the prime obstacle in the manufacture of war bread, according to advance reports submitted by members of the National Association of Bakers, whose preliminary statements show that large savings already are being effected to the Government by the reforms in vogue. The same communications indicate the patriotic co-operation of the bakers in the Government's conservation program.

Portland, Me., is one of the pioneer cities in the manufacture of war bread. By "war bread" bakers mean any bread made of other than wheat flour or by admixtures of other flours with wheat flour. A Portland baker reports: "We saved over two tons of wheat flour, 150 pounds sugar and 150 pounds lard in two days in the manufacture of war bread." This same baker reports that on successive weeks his daily sales of war bread increased from 1,200 to 8,000, to 14,000 to over 17,000 the fourth week.

A Memphis, Tenn., baker, without making a war bread, reports a saving of 3,000 pounds of flour per week, 200 pounds lard and 200 pounds sugar per week.

A Duluth, Minn., baker has evolved a formula in which the only patent flour employed is used in the sponge. He has also eliminated sugar and shortening entirely. On the basis of 15 doughs per week he has a saving of white flour of 1,350 pounds, and 97½ pounds sugar and 67½ pounds lard. This baker reports a steady increase in the consumption of rye bread, in which neither sugar, lard nor milk are used. On the basis of 1,000 loaves a day this effects a saving of 500 pounds of white flour.

A Dayton baker, by the changed formula now employed, reports a saving in shortening of 700 pounds, 1,100 pounds milk and 900 pounds sugar.

From Battle Creek, Mich., comes the word: "We have used only 1,000 pounds of substitute flours because we have not been able to purchase substitutes we wished to use. Corn flour is about the only one in the way of cereal flours that is milled extensively and when every baker in the country wishes to get 10 per cent to 15 per cent of his requirements in these substitutes it will swamp the mills which are milling other cereals."

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ROBERT GORDON GOULD, *Editor*

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Amending the Lever Act

A BILL placing more power in the Food Administration and providing for stricter conservation of food products was introduced in January in the Senate by Mr. Pomerene and in the House by Mr. Lever. The measures were referred to committees in both Houses. The measure provides that whenever the President shall find that it is essential to limit further unrestricted use, manufacture, sale or distribution of food and foodstuffs, he may by proclamation modify, limit or discontinue their use to the extent necessary to assure an adequate supply. The President would be authorized to issue rules and regulations which might vary from time to time to meet changing conditions, and in carrying out the proposed law may utilize any department, agency, or officer of the Government. Penalties for violations of the act are provided. It is designed especially to deal with public eating places, and under its terms the present voluntary "meatless" and "wheatless" days would be made mandatory.

Since the introduction of the bill, Mr. Hoover has announced several extensions of its measures which he feels are necessary:

The following letter has been made public by the United States Food Administration:

January 26, 1918.

The Honorable Sydney Anderson,

House of Representatives,

Washington, D. C.

My dear Mr. Anderson:

I am greatly obliged for your letter of January 23rd enclosing draft of an Act which you believe would be adequate to cover the present situation. I fear it does not go far enough to meet the emergency.

The points covered by your proposal are:

- Licensing public eating places.
- Percentage of wheat in flour.
- Mixing other cereals in flour.
- Wheatless or other "less" days per week.
- Use of foodstuffs in non-food products.
- Limitations on food served in public eating places.

Section (a) is effectively covered by section (f), which is much more effective and direct and would save the expense of some \$5,000 to \$10,000 per month in licensing 225,000 public eating places.

Sections (b) and (c) can be compassed under the Lever Act so far as they are practicable. Sections (d), (e) and (f) are admirable.

The extension of the measures in the Lever Act, which our experience and present situation lead us to believe are vital for conservation, should also include:

1. Control of distribution in order that all classes and localities may fare alike and that unnecessary consumption should be prevented.

2. Control of use of foodstuffs in food manufactures with a view to limiting the less essential manufactures.

3. Control of commodities critically necessary for the production and preservation of foodstuffs in order to prevent great losses of military sacrifices.

In the first instance I would refer you to the copy I enclose of a statement which we issued this morning outlining the necessity and the plans for further conservation in certain commodities which you will see covers a much wider range than the Act which you propose would cover.

While it is vitally necessary to regulate the consumption of food in public eating places, they consume, on various estimates, from twelve to twenty per cent of the total foodstuffs and if they were reduced out of all reason they would not solve the problem. Some method must be devised which will cover a much wider area of consumption.

It appears to me that we should attack the non-essential uses of foodstuffs, and that we should attack the points of unnecessary consumption of foodstuffs. By these means we can place the burden where it belongs—on the luxurious and greedy, and not upon the poor. This implies some further measures of control in distribution and in non-essential use. If you will give the whole problem study I believe you will find

that somewhere in the nation we consume or destroy over thirty per cent more food than we need for health and strength and that this margin, if it can be implemented, will supply all Allied demands. But we should not draw it from that class to which economy and moderate use is a daily necessity.

Take, for example, the case of sugar, the shortage in which will, we hope, not exceed ten per cent. We should be able to accomplish this by a reduction in the manufacture of confectionery and sweet drinks of, say twenty per cent, and these very manufacturers could substitute other things and maintain their volume of production. During the recent shortage we made a patriotic appeal to such manufacturers to reduce their consumption of sugar by fifty per cent and placed it at this figure because we did not wish to destroy the livelihood of 250,000 women and girls pending fuller supplies of sugar. I have specifically before me the case of one very large manufacturer who followed this suggestion implicitly, only to find that over a score of manufacturers of imitation goods sprang up on all sides, supplied the trade to his great damage and loss, and we were powerless to give him any protection in his patriotic action. Surely it is better that the conservation of sugar should be made in the luxury trades and that they should have protection in making it, than that we should draw upon household supplies.

The recent experience with sugar also serves to prove the necessity to have some further powers in distribution. During the entire recent sugar shortage the gross supply amounted to eighty per cent of normal consumption yet we had sporadic famines and privation all over the country because no organized distribution could be effected. The greedy got sugar and others went without.

As to conservation measures necessary to apply to commodities needed for the production and preservation of foodstuffs, I may cite the case of ammonia, which is critically necessary to maintain our cold storage warehouses, in which must repose over \$500,000,000 worth of food from time to time. The production of ammonia in 1917 was about 130,000,000 pounds; of this, the demands of the Army and Navy for explosive purposes are estimated to us as being 150,000,000 pounds per annum and the amount necessary to maintain cold storage warehouses is 40,000,000 pounds per annum. In other words, there is an absolute shortage of 60,000,000 pounds per annum at the present moment which may later on be partially reduced by increased production. Yet ammonia is being used to a very considerable extent in the maintenance of skating rinks, in cold storage of furs, alcoholic drinks, household ammonia, etc. I think the War Department has recognized that the maintenance of the cold storage warehouses is vital to the food supply of our people and that they may therefore themselves be obliged to reduce the amount of explosives manufactured and thereby possibly jeopardize our military possibilities until production can be built up.

Another typical case of this kind lies in the question of tin cans. The amount of pig tin produced in the world today is too little for the total demands. We are able to obtain only a proportion of the requirements for manufacturing tin plate. The increased demands for tin containers for our own and the Allied armies render it absolutely impossible to maintain the supply to the whole of the tin-container

users. It would seem to effect no great hardship on the American people if the use of tin plate and tin foil in toilet articles, and for containers for such other articles which can be established in either glass or paper cartons, were limited. We are, however, powerless today to effect these measures except so far as they can be done voluntarily. I feel certain that unless some effective control of the matter is taken that we will yet be unable to preserve the very large amount of fruit, vegetables and meat which must necessarily go into tin containers.

I will not weary you with more than these typical cases which lie outside of the authorities which you propose should be conferred upon the President. Not only do more exist at the present moment, but as the war goes on, new ones will arise from day to day.

We have carried on an extensive campaign for voluntary conservation. This effort has brought beneficial results in many directions, through the fine sense of service and self-denial in our people. The great majority of trades co-operate with us in the most patriotic manner but the minority who will not follow not only prejudice the patriotic but discourage and undermine their efforts. The demands, as they have developed during the last sixty days, are, I believe, greater than can be borne on a purely voluntary basis. I am perfectly willing to go on and make every effort to succeed with voluntary methods and in fact the situation is one of such gravity that we are now sending out further and further requests for more self-denial, for more voluntary action amongst the trades in support of conservation. I hope that it will succeed, but I think it only right to point out that if it shall fail, the grave responsibilities cannot be left upon my shoulders, if Congress should consider that nothing further is necessary by way of legislation.

Yours faithfully,

HERBERT HOOVER.

Pre-Convention Meeting of Food and Drug Officials.

On March 22 the Executive Committee of the National Association of Food and Drug Officials will hold a meeting at the Congress Hotel in Chicago for the purpose of arranging a program for the Annual Convention of the Association. The Convention is to be in session from August 27 to August 30, 1918.

So that as interesting a program as possible may be prepared, it is planned to have each member of the Executive Committee bring another member of the Association to the meeting on March 22. An Annual Convention unusually significant in results is expected to be the outcome.

Profits on Flour.

It is the opinion of the United States Food Administration that the gross maximum profit for wholesalers in flour should not exceed from 50 to 75 cents per barrel. The profit to retail dealers in original mill packages should not exceed from 80 cents to \$1.20 per barrel, depending upon the character of service performed. Where retailers sell in amounts less than the original mill packages, the gross profit should not exceed 1 cent a pound.

Any profit in excess of these or in excess of those obtained in pre-war times will be considered cause for investigation. Substitutes for wheat flour should not be sold at more than a reasonable advance over actual purchase price of the particular goods sold, without regard to market or replacement value at the time of such sale.

The Purposes and Accomplishments of the Food Administration

WAR with Germany was declared by the United States on April 6, 1917. President Wilson appointed Herbert Hoover United States Food Administrator on May 17, 1917. Congress had not at that time passed the Food Control Law and did not pass it until early in August.

In the meantime the President requested Mr. Hoover to do what he could to regulate the food situation in the United States, by voluntary agreements and moral suasion.

Much was accomplished, but the public got the erroneous idea, before the food law became active and while Mr. Hoover was working with the food people on a voluntary basis, that Mr. Hoover's object was a radical lowering of wholesale and retail prices.

This was not, could not have been, and is not today true. All prices naturally and inevitably have a tendency to higher levels in war time. What the Food Administration always has had in mind and will continue to have in mind is the regulation of the world's food supply so that America and her associates in the war will be properly fed at as reasonable prices as it is possible to obtain. Reasonable prices are not necessarily low prices. The situation has resolved itself into the question of getting enough food produced and distributed to feed the people.

What the Food Administration has done with regard to prices is to insure fair prices on basic food commodities to retailers, based on actual cost of production, preparation and distribution. This the Administration has accomplished by eliminating inflated prices due to market speculation in these basic food commodities, by arbitrarily stopping waste and hoarding through its system of licensing producers, distributors and retailers doing more than \$100,000 worth of business a year.

Control of prices of retailers doing less than \$100,000 worth of business a year can be secured indirectly by making available to the consumer the reasonable prices at which the dealer received his supplies and advising the consumer not to pay the retailer more than a fair profit on those commodities, and by exercising the power over licensed wholesalers to shut off supplies from retailers who charge unfair prices.

The Administration also has sought to aid the distribution of all available supplies of food, while shipping to our European associates as much as we could spare of wheat, meat, fats and sugar to make up their drastic shortages.

This is as far as the present food law permits the Food Administration to go. Further regulation of prices and commodities must be authorized by Congress before it can be effected.

The problems of the Food Administration in 1918 promise to be equally important, if not more so, than in 1917, unless, perchance, the war should end immediately, as now seems improbable in view of recent results abroad. A stimulated production is absolutely essential in any event, but there can be no greatly stimulated production unless sufficiently alluring prices are maintained to make an increase in production profitable.

Low prices in America will not win the war; increased food production in America will.

The first problem of the Food Administration, therefore, is to encourage intelligent production next year so that the food requirements of the Allied armies and nations and those of our own people may be met. It would now seem safe to prophesy that the future holds promise of further reduction in the prices of foodstuffs, but this should never be emphasized as the important aim of the Food Administration.

Within the short time the Food Administration has been in actual operation under authority of law, speculative profits have been entirely or nearly eliminated in many lines of food. The accomplishments of the Administration, when measured by contemporaneous eras, form the most remarkable page in the commercial history of any nation during war.

The real accomplishments and benefits of the Food Administration to the people might well be best judged by that which has not happened rather than by that which has. Both speculation in the exchanges and on the curbs and actual profiteering in foods have been or are being stopped on the staple commodities which go to sustain life. War has always heretofore, in all nations and with all peoples, meant unbridled speculation in foods. For the first time in history an attempt, which now seems assured of success, has been made to curb the greed of speculators during a time of national peril. It should be ever borne in mind that the most extraordinary food demands ever made upon our people are to be met, if we play our part in the destiny of nations, with a more nearly depleted larder than has ever been ours in our national history.

The only era in our national history that might be used as a measurement as to what could be expected at the present time were it not for food control is that of the Civil War. Now, after three years of drain, there is a known world-wide shortage of food, whereas, as a matter of comparison, during the Civil War there was no actual shortage in foodstuffs and yet prices not only went up very rapidly but continued ascending in the latter '60s, after the war had ended. The crest of high prices in any commodity was not reached in that era prior to 1864, and then on but few. Some prices ceased advancing at the close of the war in 1865, and some commenced to decline only in 1867, 1868 and 1869. While the general basis of prices at the commencement of the present era was considerably higher than those at the commencement of the Civil War era, the percentage of increase so far has been, and promises to continue, very much lower indeed. Many commodities in which there was then no real national shortage, let alone a world shortage, increased several hundred per cent over the basic pre-war prices. These increases were almost, if not entirely, due to speculation rather than to any natural laws of commerce. It was partially to prevent a repetition of this disastrous experience that the U. S. Food Administration was created. On the 6th day of April, Congress declared that a state of war existed with Germany. On the 17th day of May following, less than a month and a half after, President Wilson appointed Herbert Hoover United States Food Admin-

istrator. When appointed, Mr. Hoover had no power conferred upon him by law, but was directed by the President to accomplish whatever he could through voluntary agreement, and this was the program he followed until August 10, when the Food Control Law was signed. Prices, already high, ascended very rapidly between April 6 and May 17. Since that time, largely through the elimination of speculation, prices have stabilized and on an average now show a slight decline, with promise of more healthy decline in the future.

A chart was recently issued by the Canadian Food Controller based on figures obtained through the Canadian Department of Labor showing that the highest increase in prices caused by the war was in Germany; the next highest was in England, and considerably lower than either of them was Canada, and lower yet was the United States. This was based on a comparison of the average prices of commodities in the various countries with 1914 as a basis. The increase in Germany from 1914 to November, 1916, the last obtainable figures, showed that foodstuffs, on an average, were 120 per cent higher than they were in 1914. With the figures carried up to the month of September, 1917, in England the prices on an average were 105 per cent higher than they were in 1914; in Canada they were 60 per cent higher; in the United States they reached 50 per cent higher during the month of May, and are now about 40 per cent higher.

Wheat is another illustration of what might have happened. Between April 8, when a condition of war was recognized, and May 17, when Mr. Hoover was appointed Food Administrator by the President without powers of law, the price of both wheat and flour increased very materially. The wheat that sold for \$1.80 per bushel in February was selling for \$3.50 May 17. Flour that sold for \$8.75 in February was selling for \$17 May 17. The wheat producers received but little or no benefit from this radical increase in price. In truth this was largely a speculative increase made at a time when there was only a rather vague understanding in the public mind of the wheat demands to be made this year upon the United States. Perhaps nothing more remarkable has ever been recorded in commercial history than the spirit of acceptance on the part of the grain exchange people of the country when the Food Administrator without actual legal power, in May called their representatives together in Washington to inform them that all speculation in wheat must cease.

It should be remembered that at no time in the history of this country had there ever been such opportunities for speculative profits in wheat and flour. Not only had all the wheat in this country become necessary for the sustenance of the world, but there was an admitted shortage, and the time had come in the history of nations when the necessity was so admittedly great that price ceased to be the primary consideration. It is to the credit of the grain exchange men that they not only received this notification in the right spirit, but that they accepted it without protest, and with high patriotism endorsed the Food Administrator in his action of taking away their business existence as speculators. This becomes all the more into the Food Administrator was without legal power, and without any power other than to take action to obtain voluntary agreement. The price of flour at that time had risen to \$17 per barrel. It is now selling at remarkable because when this agreement was entered

an average price throughout the United States of less than \$10.50 per barrel. The normal consumption of flour in the United States is about ten million barrels per month, and estimating the saving at only \$6 per barrel, this would aggregate \$60,000,000 per month left in the pocket of consumers. In actuality, how much of a real saving has been accomplished cannot be put into figures, because no man's mind can accurately measure just how high flour or wheat would have gone through speculative influence had not this action been taken. To attempt to do this would be to attempt to measure the greed of the men who speculate, because the matter of price would have been thoroughly in their hands.

The highest prices prevailing in the Civil War era ran from 1865 to 1868. Let us take the wholesale prices for that era, using the average prices for 1861 (pre-war) as a basis (col. 1), and show the increase on certain commodities during the Civil War (col. 2). Then let us take the average wholesale price for the same commodities for the first three months of 1917 (pre-war) as a basis (col. 3) and figure the prices these commodities would reach under the same rate of increase as prevailed during Civil War days (col. 4). These being wholesale prices, 25 per cent must be added (col. 5) to obtain an approximation of the retail prices which our commodities might attain, did other-day conditions prevail.

	Average 1861	Attained in Civil War	Average first 3 months 1917	Civil War Increase Applied	25 per cent Added
Corn, bu.....	.264	1.28	1.0329	4.91	.....
Wheat, bu.....	.94	2.16	1.8924	4.32	.....
Cattle, 100 lbs.....	3.375	9.50	11.917	33.53	.....
Hogs, 100 lbs.....	4.188	15.60	12.7746	47.63	.....
Beans, lb.....	.0348	.116	.119	.389	.486
Butter, lb.....	.154	.55	.391	1.39	1.76
Cheese, lb.....	.078	.25	.2514	.803	1.00
Coffee, lb.....	.127	.435	.098	.335	.42
Eggs, doz.....	.144	.46	.3962	1.31	1.64
Flour, bbl.....	8.375	17.00	9.305	18.87	23.587
Lard, lb.....	.088	.245	.1443	.40	.50
Cornmeal, lb.....	.6332	.088	.02716	.0718	.0897
Bacon, lb.....	.055	.159	.179	.513	.651
Hams, lb.....	.067	.249	.2115	.782	.977
Pork, bbl. (100 lbs.)	16.438	45.50	33.6458	92.84	116.05
Milk, qt.....	.05	.09	.0501	.09	.1125
Cornstarch, lb.....	.075	.135	.075	.135	.168
Sugar, lb.....	.087	.30	.0684	.233	.2896
Tea, lb.....	.45	1.70	.24	.904	1.13
Potatoes, bu.....	2.00	4.00	2.1796	4.35	5.437

It should always be remembered that in the present war era there is a world shortage of food, while in the Civil War era there was plenty of food throughout the world and that the increases in prices then were not in reality due so much to food shortage as to speculation.

Benzoate of Soda in Fish Legalized in Pennsylvania.

Food Administrator Heinz of Pennsylvania has set aside the benzoate of soda decrees of State Food Commissioner Foust and ordered that till further notice salt fish may be sold freely, though preserved with benzoate of soda, so long as the declaration conforms with the federal regulation in the premises.

Canada Changes Food Plan.

The office of Food Controller for the Dominion was abolished under an Order in Council adopted February 9th. The functions formerly exercised by that official will be assumed by a new organization to be known as the Canada Food Board, consisting of three members.

Fraudulent Egg Substitutes

IN view of the great number of egg substitutes constantly appearing on the market and the careful scrutiny of them necessary in order that the public may be protected, the following letters are of much interest. Commissioner Foust of Pennsylvania is especially active in this connection as is indicated below.

February 4, 1918.

Robert G. Gould, Publisher,
15 South Market Street,
Chicago, Ill.

Dear Sir: You will find enclosed copies of analyses of a number of samples of so-called "egg savers" which have been analyzed by our Philadelphia chemist.

These products are rank frauds on the public, as they consist of cornstarch, coal tar dye, and in some cases a faint trace of casein and albumen. Their very names are deceptive, and the manufacturers who are putting them out are taking the people's money and giving practically nothing in return, as the fakes do not contain any constituent of an egg. Their sale in Pennsylvania is unlawful.

I herewith enclose copy of the General Food Act and would invite your attention to Section 2, defining the term "Food," which includes so-called "egg savers"; also to Section 3, Clauses 1 and 4, which not only prohibit the sale of such products, but prohibit the sale of pastry, puddings, and the like, prepared by their use.

Very truly,

JAMES FOUST,
Commissioner.

The sections of the Pennsylvania act to which Commissioner Foust refers read:

Section 2. That the term "Food," as used in this Act, shall include not only every article used for food by man, but also every article used for, or entering into the composition of, or intended for use as an ingredient in the preparation of food for man.

Section 3. That for the purpose of this Act, an article of food shall be deemed to be adulterated—

First. If any substitute has been mixed or packed with it, so as to reduce or lower or injuriously affect its quality, strength, or purity.

Fourth. If it be mixed, colored or changed in color, coated, polished, powdered, stained or bleached, whereby damage or inferiority is concealed, or so as to deceive or mislead the purchaser; or if by any means, it is made to appear better or of greater value than it is.

The analyses of the ten samples of "egg savers" made by the chemist of the Pennsylvania Department of Agriculture, Mr. La Wall, are as follows:

E-conom-O Egg Substitute.

Charles H. La Wall,
Analytical and Consulting Chemist.
Food Analysis—Drug Analysis—Water Analysis.
Philadelphia, Nov. 15, 1915.

Dear Sir:

I have completed the analysis of E-conom-O, the egg substitute sent to me recently by you, and I find it to contain about 18 per cent each of egg albumen and casein and about 64 per cent of starch, principally rice starch, colored with a permitted coal tar color.

It is labeled more carefully than the majority of

these products and the name is not deceptive, but it shares the same disadvantages of all the rest in that it does not truly represent egg contents, being devoid of fat and containing starch, which is foreign to egg. Furthermore, like all the others, it imparts a coloration indicating the presence of an abundance of eggs and articles baked with it could not be legally sold for that reason.

Very truly yours,
Charles H. La Wall.

Eggine.

March 10, 1916.

The Penn Specialty Co.,
Hanover, Pa.

Gentlemen:

I have your favor of the 9th, and in reply thereto permit me to say that the so-called Eggine, which contains no egg or no constituents of an egg, and does not furnish the food or pastry that it is used in with any of the properties of an egg, but, on the other hand, is an artificially colored starch preparation, to my mind and notion, based on the analysis of Professor La Wall, is a fraud.

I herewith enclose a copy of my letter to you dated December 28, and I have underlined a portion of the first paragraph in which I stated, "and Eggine cannot be sold in Pennsylvania."

I have communicated with Charles T. Morrissey & Co., Chicago, Ill., regarding this product.

Very truly,

James Foust,
Dairy and Food Commissioner.

Eggnit.

Nov. 30, 1917.

Mr. James Foust,
Dairy and Food Commissioner,
Harrisburg, Pa.

Dear Sir:

I have completed the examination of the sample of Eggnit, sent by Agent Woodward, and find it to be a slightly different mixture from the rest in that it is about 90 per cent cornstarch, with the balance made up of casein and baking soda and coal tar color. There is an outline of an egg on the face of the label, which constitutes misbranding under the law. Otherwise the product merits the same criticism so frequently repeated concerning all of these products—that it replaces eggs only so far as the leavening properties are concerned and that this is not made clear upon the label.

The presence of the color is open to the objection previously stated in regard to others in that it lends an element of deception and will get anybody in trouble under the law who tries to sell articles in the preparation of which it has been used.

Very truly yours,

Charles H. La Wall.

Egg-Nu.

March 9, 1917.

Dear Sir:

The sample of Egg-Nu sent by Special Agent Woodward has been analyzed and found to consist princi-

pally of cornstarch with about 30 per cent of casein and colored with a coal tar color.

It is misbranded in several particulars. On one part of the package it states "containing the nutriment of eggs," and "for all cooking and baking purposes—gives results equal to fresh eggs." Both of these statements are incorrect. There are only three ounces of dry material present, which are supposed to be equal to two dozen fresh eggs, another untrue claim, for two dozen fresh eggs contain over one-half pound dry nutritive substance.

The coal tar color lends another element of deception, for baked products made by the use of Egg-Nu would have a deceptive appearance of egg richness.

You have my letters on your files, many of them, concerning similar products examined in the past and what I have said of one practically is applicable to all of these so-called egg substitutes. They are wicked frauds which add to the already high cost of living by making poor people pay an excessive price for a little cornstarch and casein under the impression that they are saving money.

Very truly yours,

Charles H. La Wall.

Egg-O-Gene.

October 4, 1917.

Dear Sir:

I have completed the examination of the egg substitute called Egg-O-Gene sent in by the Easton Flour & Feed Co., whose letter is returned.

I find it to consist of approximately three-fourths cornstarch and one-fourth casein and to be colored with a coal tar color. This composition is essentially in conformity with the claims on the label in that respect.

The name Egg-O-Gene, however, which is the principal title, is misleading, even though later qualified by the words "Egg substitute," and on another part of the label by a truthful statement of composition. The phrase "Equal to 36 eggs" is also misleading in its unqualified form, as is also the statement on the label that it is "Equal to eggs at 9 cents per dozen."

The presence of coal tar color gives to products made with Egg-O-Gene a deceptive appearance of egg richness and this is another reason for its condemnation.

The product, as named and labeled and containing coloring matter, as it does, is deceptive and should not be permitted to be sold.

Very truly yours,

Charles H. La Wall.

Egg-O-Lene.

December 4, 1914.

Dear Sir:

The Egg-O-Lene is a composition of starch, gelatin and coal tar color. It is misbranded because of the misleading statements upon the label in several places, but particularly in that it bears upon the label the outline or representation of an egg, when, in fact, there is no egg present. This is a violation of Paragraph 3, Section 4, of the General Food Act.

Besides, any cake, jelly roll or custard made with it would be illegal because of being colored with coal tar color.

Very truly yours,

Charles H. La Wall.

Egg Save.

January 19, 1915.

Dear Sir:

I have completed the analysis of the product labeled "Egg Save (artificially colored). Baking and cooking without eggs."

"Can be substituted for eggs in nearly all kinds of baking and cooking if used according to directions. Makes delicious salad dressing. All the ingredients in Egg Save are pure and wholesome. Net weight 1 $\frac{3}{4}$ oz. Price 25 cts. Use one rounding spoonful (small spoon in box) of Egg Save in place of each egg called for in recipe, dissolved in enough lukewarm water or milk to whip with fork. Too much liquid used makes the batter too thin, requiring more flour. This box contains from 36 to 40 spoonfuls."

"For clearing coffee dissolve and mix a rounding teaspoonful of Egg Save with ground coffee. Sole manufacturers. The Parmelee Mfg. Co., Buffalo, N. Y. Contains about 18% certified fresh egg albumen, casein, cornstarch, carbonate of soda. Certified color. Keep dry."

This sample was sent to you by Chas. W. Martin, of Greencastle, Pa., whose letter is herewith returned. There is a picture of an egg on the front label with the words "Egg-Save" contained therein. The analysis shows: sodium bicarbonate—trace; color—artificial coloring present of a permitted variety; proteid matter—7.4 per cent; cornstarch—over 90 per cent; poisonous metals—none.

The proteid matter represents both the egg albumen and the casein. If the statement of 18 per cent fresh egg albumen is true, then that figure would correspond to about 2.5 per cent dry proteid, leaving about 5 per cent for the casein.

This product, while it does contain a small amount of the solid matter of both egg white and milk, contains such a large proportion of cornstarch and such a small proportion of egg that the package is clearly misbranded in containing a representative of an egg on the front label, when a more fitting picture would be that of an ear of corn.

The underlying basis of fraud in this product, as in many similar ones, is found in the fact that the nutritive value is so low in comparison with the food they are intended to replace that they bear no comparison in point of actual value. This fact, together with the fact that cakes baked with a product like this would be illegal in showing a false appearance of richness, makes the deceit all the more dangerous to the consuming public.

Very truly yours,

Charles H. La Wall.

Near Egg.

January 28, 1916.

Dear Sir:

I have completed the analysis of the sample of Near Egg, sent in by you on inquiry of the Peters Manufacturing Co., of Ridgewood, N. J., and find it to be about two-thirds casein or powdered skim milk and one-third rice starch, colored with a coal tar color.

There is nothing unwholesome about any of the ingredients in such a mixture, but the composition is so vitally different from egg that it cannot be considered as a proper replacing substance from the standpoint of nutrition but only as a leavening agent.

The presence of the coal tar color is the most serious objection to it as a baked article would have the yellow appearance due to the presence of the normal amount of egg and would therefore have a fictitious

appearance of value and could not be legally sold on this account.

Very truly yours,

Charles H. La Wall.

Paragon Egg Substitute.

December 21, 1915.

Dear Sir:

The sample of Paragon Egg Substitute sent in by you a few days ago upon inquiry from Arthur S. Bubbl, of Pen Argyle, Pa., whose letter is returned herewith, has been analyzed and found to contain about 65 per cent of casein and 35 per cent of rice flour, colored yellow with a permitted coal tar color called Orange I.

A product of this kind will replace eggs in one respect only, and that is in the leavening power where the casein acts similarly to the albumen of the egg. In food value, however, the product is deficient in comparison with the eggs it is intended to replace and what is still more serious, the presence of the coal tar color is purely deceptive in that it gives the appearance of eggs to the product when none are present. A cake made with this article would be illegal if offered for sale in Pennsylvania.

Very truly yours,

Charles H. La Wall.

Ward's Magic Egg Saver.

January 19, 1915.

Dear Sir:

I have completed the analysis of Ward's Magic Egg Saver, sent to me by you upon complaint from Samuel A. Greene, Mt. Union, Pa. It bears the following statements upon the package:

"Ward's Magic Egg Saver—Saves the cost of eggs. Each package of Ward's Magic Egg Saver will, in our opinion, serve the purpose of four dozen of eggs, except in nutrition, and will save, according to our calculation, the cost of over \$1.00 worth of eggs. Net weight 5.5 oz. when packed. Price 25 cents.

"The coloring used in this preparation is an uncertified coal tar product. In baking cakes, puddings, pastry, etc., use a small or level teaspoonful of Magic

Egg Saver for every egg that would ordinarily be used. One trial will make you a constant friend of Ward's Magic Egg Saver. It will give to your cakes and pastry that rich "eggy" look and also save your stomach much work in digesting heavy food.

"Ward's Magic Egg is not a substitute for baking powder. Beware of imitations.

"Mary had a little hen

That acted very queer.

She always laid when eggs were cheap.

But quit when they were dear.

"Moral: Use Ward's Magic Egg Saver and eat the hen. Guaranteed by Ward & Co. to comply with the pure food laws of Illinois."

The foregoing is an unusual combination of nerve and frankness which makes it difficult to decide whether the product is legal or illegal. Chemical analysis shows the product to consist of cornstarch colored with a permitted coal tar color, Orange I. There is no evidence of gelatin, casein or any other nitrogenous product which would give it a food value comparable to eggs. There is a trace of arsenic (0.25 parts per million, which is within the permissible limit), which probably comes from the uncertified form of the coal tar color used.

The product will not replace eggs except in color or appearance of the article baked and any such article baked with Ward's Magic Egg Saver would be illegal if placed on sale. The manufacturers are so frank in their statement of the fact that the nutritive value is deficient that I doubt if there is any violation of the law in its sale. The product is undoubtedly one of the increasing number of fake products which are on the market for the purpose of entrapping the unwary. The fraud in this case lies in the fact that eggs alone will sustain life, while on a diet of this article alone an individual would quickly starve to death. The idea of 6½ ounces of cornstarch taking the place of 4 dozen eggs, equivalent to 1 pounds of liquid eggs, or more than 1 pound of dried eggs, is ridiculous.

Very truly yours,

Charles H. La Wall.

National Canners Convene.

The Eleventh Annual Convention of the National Canners Association and Allied Industries is to be held in Boston from February 11 to 16, 1918. The headquarters of the convention will be the Copley-Plaza Hotel and Mechanics Hall.

Speakers of note who will address the convention are: Governor McCall of Massachusetts, Mayor Peters of Boston, Frank Gerber, first vice president of the National Canners' Association; Theodore F. Whitmarsh, president National Wholesale Grocers' Association; J. H. McLaurin, president Southern Wholesale Grocers' Association; Dr. C. L. Alsberg, chief of the Bureau of Chemistry; Henry Burden, president National Canners' Association; C. M. Ams, president Canning Machinery and Supplies Association; Joseph Keever, president Canned Foods and Dried Fruit Brokers' Association; Charles H. Bentley, chief of Division of Canned Foods, U. S. Food Administration; Chief Justice Covington of the District of Columbia Supreme Bench; F. M. Shook, secretary Western Canners' Association; J. P. Olney of Rome, N. Y.; Walter J. Sears, president Western Canners' Association, Chillicothe, Ohio; Col. W. R. Grove, Quartermaster General's Office, U. S. Army; William Silver, Albert T. Bacon and J. W. McCall, members of Com-

mittee on Standard Classification of Accounts of National Canners' Association; Dr. M. F. Barrus, Bureau of Plant Industry, U. S. Department of Agriculture; James Moore, Oneida, N. Y.; W. H. Fromm, Thiensville, Wis.; W. G. Campbell, assistant chief Bureau of Chemistry; Commander John M. Hancock, Bureau of Supplies, U. S. Navy; E. O. Heyl, Division of Co-ordination of Purchase, U. S. Food Administration; Dr. W. D. Bigelow, National Canners' Association; Dr. Firman E. Bear, Ohio State University; Dr. A. W. Bitting, National Canners' Association Laboratory at Washington, D. C.; Frederick W. Murphy, chief chemist for the National Sugar Refining Company; J. S. Scudder, U. S. Food Administration; L. S. Foster, president National Kraut Packers' Association; Dr. J. D. DeLoach; Mrs. George W. Coleman, president of the Women's City Club of Boston; Mrs. Walter J. Sears; Miss Katherine B. McMahon, of the American Red Cross of Boston; Miss Alice Bradley, principal of the Boston School of Cooking.

Frank H. Stadtmueller Dies.

Frank H. Stadtmueller, dairy and food commissioner of Connecticut, died recently at his home at Vine Hill Farm, West Hartford, after a short illness.

Pennsylvania Lac Glaze Case

The legality of the use of lac glaze on confectionery under the food law of Pennsylvania has again been tested in the Pennsylvania courts, and again the courts have decided that such use is legal.

This is the third test case that has been had on the subject, one in the federal court at Baltimore under the National Food Law, and two in the courts of Pennsylvania under the Pennsylvania Food Law. All three decisions sustained the legality of the use of the glaze.

The first test case on the subject was brought by the government food officials under the provisions of the National Food Law in the federal court at Baltimore in 1911 against James E. Schaeffer, a confectioner of Baltimore, for having shipped confectionery known as "fudge" that contained a lac glaze. In that case the subject was gone into exhaustively, the Court permitting the evidence to take a very wide range for the purpose of getting all the facts that had any bearing upon the subject. There were many expert witnesses who testified on both sides, as well as well-known confectioners from various parts of the country. At the close of all the testimony the Judge submitted the case to the jury, after instructing them fully on all the various points of law involved in the case. The jury, after a very short deliberation, returned a verdict of "not guilty." Since that time there have been no further prosecutions on the subject under the National Food Law. However, the Food Department of Pennsylvania refused to accept the decision of the federal court and insisted that the sale of such glazed confectionery in Pennsylvania was illegal.

The first case brought on the subject under the Pennsylvania Food Law was tried at Beaver Falls, Pa., in December, 1911. After this case had progressed well towards a conclusion, the trial was ended abruptly by the Judge on the representation of the state prosecutors that the jury had been permitted to eat the exhibits, these exhibits being samples of vari-

ous varieties of confectionery glazed with the glaze complained of by the State.

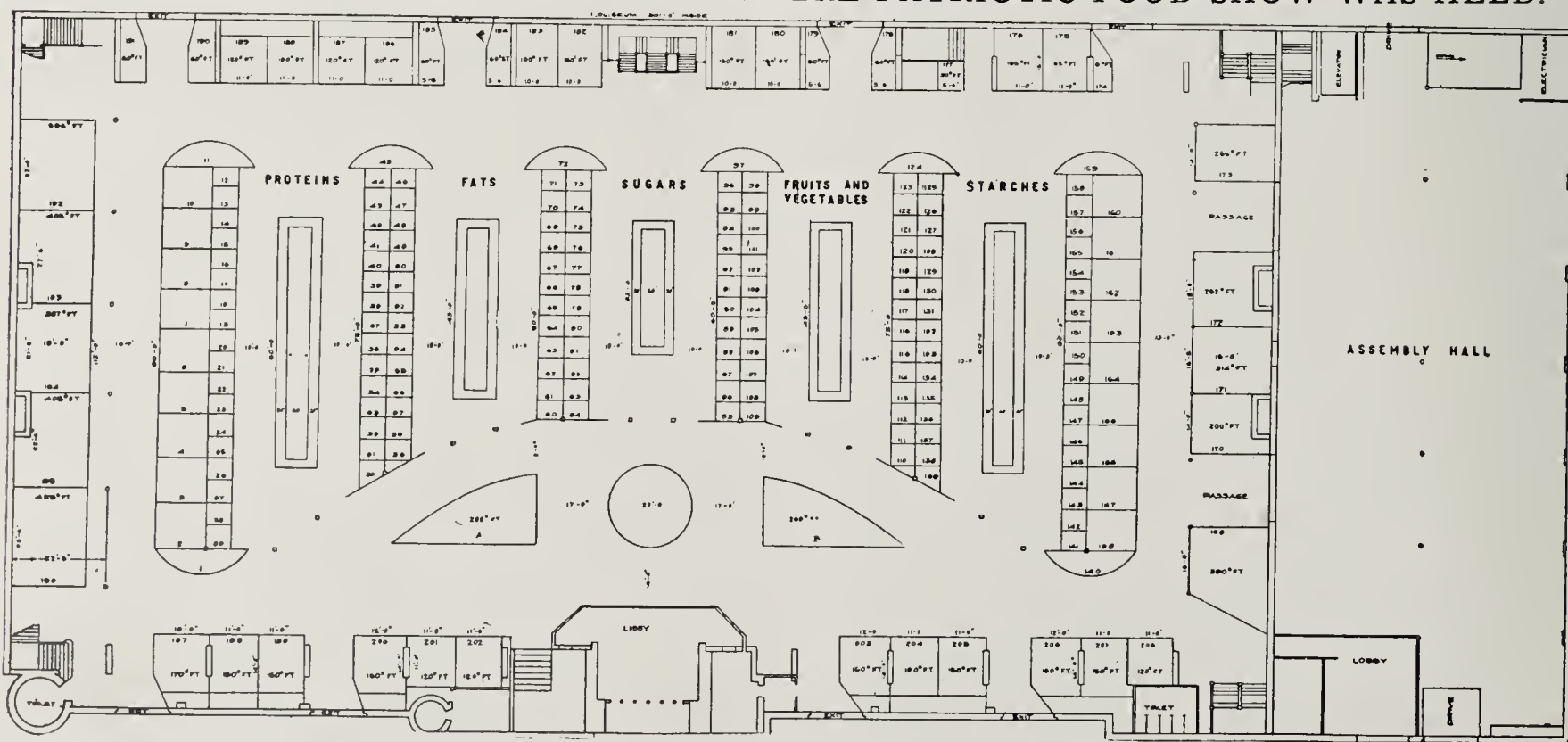
Then another test case was arranged for and tried at Greensburg, Pennsylvania, in September, 1916. In that case the Court, like the federal court at Baltimore, permitted the evidence to take a very wide range on both sides, so as to get all the facts that might have a possible bearing on the subject, and the trial lasted about two days. At its close the Judge, after an exhaustive and able review of the law, gave his opinion to the effect that the use of the glaze did not in any way violate any of the provisions of the Food Law of Pennsylvania and directed the jury to find the defendant not guilty.

Apparently not being willing to accept the decision in the Greensburg case as final, the Food Department of Pennsylvania instituted another prosecution in the courts of Philadelphia against Charles Rademan, a Philadelphia confectioner, for selling confectionery known as "fudge" glazed with the same glaze as was involved in all of the other cases. This case was tried in Philadelphia on January 25, 1918. Two charges were made in this case, one being that the glaze reduced, lowered and injuriously affected the quality, strength and purity of the candy, and the other being that the glaze was an ingredient deleterious to health. At the trial of the case the State abandoned the second claim, stating that they would not contend that it was in any way injurious to health.

The case was tried to a conclusion on the other charge; and the Judge, after short instructions to the jury, left the case to them to decide. The jury without leaving the jury box returned a verdict of "not guilty." All of these cases were defended by the National Confectioners' Association through its general counsel, Thomas E. Lannen of Chicago.

The glaze involved had been used on confectionery for over half a century, both in this country and in Europe. It is necessary to use it on certain kinds of candy, including some of the most expensive and highest grade confectionery that is made. The purpose of its use is to keep the confectionery from deteriorating either by absorbing moisture or by drying out.

FLOOR PLAN OF CHICAGO COLISEUM WHERE PATRIOTIC FOOD SHOW WAS HELD.



In addition to the exhibits of foods appropriate to each section, space was occupied as follows: A-B, 205, U. S. Food Administration; 175, U. S. Fuel Administration; 179-184, U. S. Army and Navy; 187-188, U. S. Bureau of Fisheries; 197-202, U. S. Department of Agriculture; 206, Garden Bureau; 207, Library Section, Illinois Food Administration; 1, 11, 45, 72, 97, 124, 140, 159, Cook Books Sold.

Food Wastes: Some Causes and Remedies

SPEAKING before Franklin Institute, New York City, on January 24, Lucius P. Brown, director of the Bureau of Foods and Drugs of the New York City Health Department, said that, in the past, Americans have been rather proud of the fact that they were a wasteful nation, and that there has been "a certain amount of reason for wastefulness, because it actually costs us more to save than to waste." With the outbreak of the Great War, however, and the increasing value of foodstuffs overshadowing the old medium of exchange, money, thrift has become "the highest form of patriotism."

Preventable wastes in foods are innumerable and to be found wherever food is produced or handled. Mr. Brown, however, confined his lecture to the wastes which occur after the crop has matured—in harvesting, in manufacture, in transit and distribution, and in the kitchen. He estimated that a considerable proportion of the cereals called for by the Allies could be supplied from the ten per cent of all our crops grown which is said to be wasted.

That this is possible, Mr. Brown said, is shown by the application of household economies already forced by high food prices of the past three years. The figures of garbage collected in three boroughs of the City of New York show an 8 per cent reduction for 1917 over 1916; in Boston during three months of 1917, as compared with 1916, there was a reduction of 12.3 per cent; while in New Haven during 1917 there was an estimated decrease during a part of the year of about one-third. A short study of the actual losses of materials which were good when they went into the garbage pail in New York City gives the surprising figure of \$50 per load as the average, ranging from \$20.80 to \$61. This reduction of garbage therefore means an actual saving in money of over one and a half million dollars.

Waste would seem to be expected in the case of perishables like vegetables, fruits and eggs, but it is also surprisingly large in the more stable foods such as cereals, beans, and so forth. As an instance of the waste in perishables, Mr. Brown quoted the—to all economists—historic example of the extreme waste in marketing eggs. Fortunately for the foodstuffs trade in general, he went on, the handling of most perishables is not so complicated as in the case of eggs, or else is better systematized.

The usual course of foodstuffs is from farmer to commission man or wholesaler, to the small jobber, to retailer and to consumer. Under these heads Mr. Brown proceeded to take up his discussion.

Wastes in the purely marketing end of the business cannot be better illustrated than by the experience of the New York City Health Department's Bureau of Food and Drugs under its recently inaugurated system of inspection. This Bureau is charged with the duty of controlling the quality and purity of the food supply of that city and in order to do this most effectively it has considered the food supply as a stream and examines this stream at every available point from producer to consumer.

Obviously, in the case of a city, it can, as a practical proposition, go back to points of production only in the case of certain commodities having a very direct public health bearing, such as milk. It therefore begins with the sampling of the food-stream as the food comes across the city line. The force for inspection is subdivided into a number of districts, somewhat on the plan of police precincts and, in addition, there are squads assigned to special work. There are two permanent squads, one of which is assigned to the railway

and steamship terminals (which means, in New York City, largely the piers on the Hudson and East Rivers, both in Manhattan and Brooklyn), and the other to the factories. The duty of the Terminal Squad is to prevent unsound or damaged foods from entering the city, and of the Factory Squad, which also has charge of warehouses, to see that unsoundness originating within the city is properly controlled. The Terminal Squad is instructed whenever unsound material is found to inquire into the reasons for this unsoundness and to make a report thereupon with a view to correction of conditions through advice to shippers or transportation companies.



Lucius P. Brown.

It is illegal for unsound food to come into the city. Therefore, when a lot wholly unsound is found, it is at once condemned and ordered destroyed; a lot partly unsound is placed under embargo and the holder is ordered to separate the sound from the unsound portions. Price levels will then determine whether the holder will carry out this order or abandon the goods to be destroyed.

It is interesting to note that the condemned food in New York City during 1917 contained nutrients sufficient to have fed for the whole year one of Uncle Sam's regiments of 3,775 men.

Examples of Marketing Wastes.

It will be interesting and profitable, Mr. Brown continued, to go into the details of some of the cases reported by this Terminal Squad.

For instance, on June 28 and 29, 1917, three cars of potatoes from Florida arrived at Pier 28, North River, in bad condition. They were ordered overhauled, and because the commission merchant consignee refused to overhaul promptly all of one car had to be destroyed. These potatoes were packed and shipped while wet into double-headed barrels, insuffi-

ciently ventilated, and therefore heated while in transit. Not only did the shipper lose the barrels which were destroyed but he had to take a price lower than the market for subsequent perfectly good shipments because buyers were afraid of his line, as he advised me in a letter.

We should not expect this kind of loss in canned goods but 6,500 pounds (164 cans) out of a carload of tomato paste, packed in 5 gallon cans, was found on November 10, at Pier 28 in bad condition. These cans had been placed in the car without being crated and without braces or boards to prevent shocks in shipment. The consequence was that the cans in the lower tiers parted at the joints from the weight on them and a large number of the others were punctured, as a result of improper stowing while in shipment.

Marrons, or so-called Italian chestnuts, are now being shipped in large numbers from Spain and Portugal. There is a large accumulation of these nuts awaiting transportation and the United States appears to be the chief, if not the only market. The ships are ill-ventilated, when any ships at all are available, and run slowly because of the high price of coal. It has been found necessary to embargo almost all shipments received this season because they are heated and the total condemnations amount up-to-date to more than 2,000,000 pounds. This is one of the classes of waste which it is almost impossible to prevent under present conditions, because of disturbances produced by the war. The same thing is true of a recent condemnation of some 1,900 barrels of Spanish grapes.

An instance of actual conservation is involved in the case of 1,300 boxes of lemons last June. In this instance the owner was prevailed upon to overhaul, making an actual difference in his loss of \$281.00, while an analogous instance is that of 29 barrels of potatoes received in July which were turned over to the city salvage kitchen, and the 24 barrels of potatoes recovered sold to poor people at a price of one cent per pound. Another instance on the same day showed that the spoilage of 87 bags of potatoes out of a lot of 250 was due to the fact that early potatoes were shipped in burlap bags when they should have been shipped in ventilated barrels. This was the farmer's fault; and another case where the farmer made a mistake occurred the following month, in which three-fourths of a shipment of 200 barrels from Virginia was left after digging exposed to rain followed by sun, packed when thus heated, and then were allowed to stand on the loading track for several days, awaiting a track-buyer.

A loss due to poor judgment of the best marketing section is exemplified by the large shipments of cucumbers to the New York market during the week ending July 1st, resulting in a market glut. After about 10,000 pounds had been sent to city institutions, 100,000 pounds additional were dumped upon the Jersey meadows because there was no sale for them and they had become or were becoming unsound.

During the week beginning August 24, there arrived at the Spanish Line Pier in Brooklyn, 125,000 pounds of onions, partly unsound, and the consignees refused to overhaul them and pay the duty. More than 40,000 pounds could have been saved by volunteer workers but for the fact that the Government refused to waive demand for duty on the sound portions.

For the past year there has been an excellent market for beans at high prices, the result being that large shipments have come in from South America, India, Manchuria, etc. Some of these beans, particularly those from South America, are infested with eggs and larvae of certain weevils. On storage these develop and the infestation spreads from the original proportion of three or four per cent of the lot to fifty per cent and more. These flies are impartial in their tastes and will infest other lots of beans in the same warehouses, whether of domestic or foreign origin. The losses within the last twelve months from this cause run to millions of pounds and there is the additional grave danger of introducing such dangerous pests into our own fields. All this can be prevented by prompt fumigation of the beans on receipt. No government agencies up to this time have had laws to proceed under to compel such fumigation, although the City requires that they be fumigated and made sound before actually entering trade.

These are only a few typical instances, and practically all of these wastes are preventable. The importance of suitable and strong containers is another side of the question, and one which Mr. Brown said needs great emphasis. So, too, with losses through failure to grade and pack properly. Farmers are too prone to "load potatoes 'field run,' plate barrels of

apples (putting the baby's size in the middle), load specked goods with the sound." It is the Western fruit-growers' strict attention to grading and packing which makes it possible for him to compete favorably with the less attractive Eastern-grown products in Eastern markets.

Wastes at Retailer's End.

The waste at the retailer's end is chiefly due to neglect of stock and over-buying, and in the aggregate probably amounts to a very great deal. Vermin and unsound stuffs contaminate the sound stock; dented or discolored cans are destroyed, without regard to the state of their contents, because they are less salable than bright, undented cans; where food is sold in very small portions, as in the case of quarter loaves of bread in large cities, the cut portion, left over night, is unsalable. What Mr. Brown calls the "fancies of customers" are responsible for many of the retailer's losses.

Waste in the Kitchen.

The largest wastes of all, however, are in the kitchen, whether in the private family or the restaurant.

A short survey made in New York in July, 1917, of the amount of food thrown into the garbage pail shows how much we actually throw away. Garbage varies greatly in its composition and the amount of waste will vary with the race of the consumer, with the actual price of foods, and with the scale of living. Even giving all due allowance to these limitations, this survey is very illuminating. It was made by accompanying the garbage collectors on their rounds, sorting out, estimating and listing the kind and amount of food found in the garbage cans. Some 27 per cent of material was found which was fit for use when thrown into the garbage pail, giving an average value per pound of the whole of 2½ cents or \$50.00 per ton load. If the amount and value of this be discounted 20 per cent we reach the huge sum of \$15,945,520 or a value sufficient to buy food for 136,520 people for a year. Of this waste about one-third is bread and about half as much is meat, the rest being vegetables, beans, and so forth. The waste is, of course, greatest in well-to-do sections and there is little waste by the poorer families. In the latter case it consists mostly of vegetable tops and trimmings which the French would use. The redeemable values vary from 1.4 cents in the poorer section of the city to 3.5 cents in the more well-to-do. The medium wage-earner, the small business man or the rich man appears to be the worst offender.

One sin of which some hotels are unquestionably guilty is the burning of garbage as the easiest way to get rid of it. It should, of course, be utilized for its fat and feeding value for animals. The hotels apparently have much to answer for to the Food Administration, if we are to credit the newspaper reports which indeed are confirmed by the observation of all of us who have occasion to deal with them. Their offenses are based on a desire to get and keep business. Here again the customer is responsible and we have to condemn the hotel proprietors possibly for nothing except lack of backbone and a failure to get together among themselves, so as to eliminate unfair competition. Our own investigations last summer showed that there are entirely too many side orders and side dishes served, the portions were unnecessarily large, there was a great waste of the expensive and necessary milk, butter, cream and eggs in the making of fancy pastry and at that time there was an enormous waste of bread which was sold after one day old for hog and chicken feed. The latter practice has now practically been stopped, I believe.

The more intangible losses due to unbalanced rations, to poor cooking and to the lack of a proper system in the kitchen are probably very much larger than the wastes in garbage, but there is no means at hand of estimating them.

Waste Due to Non-Essential Industries.

From a war-time standpoint, Mr. Brown laid a heavy food wastage at the doors of non-essential food industries. He denied that the candy shops "serve any other urgent economic need than that of an occasional physician," or that the soft drink stands make "any notable contribution to the national nutrition."

He questioned the value of free manufacture or excessive use of condiments, urging a gradual reduction in output of non-essential industries until a war-time basis is attained. Government power to punish wilful wasters, whether public or private, as in England, Mr. Brown believed should be granted at once.

Reverting to the subject of marketing wastes, Mr. Brown listed the causes of a purely economic nature as below:

(a) In marketing at country points: lack of knowledge of market conditions and of prices on the part of farmers; an unnecessary number of local buyers; abuse of monopoly power when there is only one buyer and of price agreements when there are several buyers; poor business management; poor roads.

(b) In the wholesale trades: opportunity for sharp practice and fraud; lack of adequate inspection system; lack of adequate price quotations system; insufficient means of procuring and disseminating information on crop and market conditions and crop movements; lack of uniformity of methods, customs, grades, packages, and so forth, as between different markets; control of auction companies by cliques, and so forth.

(c) In the transportation end: ill adjustment of rates between localities and between commodities; lack of uniformity in making adjustments of claims for damage; unfair icing charges, and so forth.

(d) In the retail system, which is the most expensive element in the marketing system: dishonesty in weights and misrepresentation as to quality; overstocking; too little credit; delay in payment for goods bought from wholesalers; unnecessary duplication of delivery and other equipment and services.

The retailer, however, is not responsible for all his excessive costs. The desire of consumers for expensive services like prompt delivery of small orders is one of the chief causes of lost motion in food distribution.

Remedies Suggested.

When the question of remedies is considered, it is necessary to remember that causes of waste are very numerous and very diverse and that no simple, single solution can be found. The economic and probably many of the physical wastes may be remedied in the four directions of: (1) co-operation among farmers and among consumers; (2) associated effort on the part of middlemen; (3) education; (4) government regulation.

For farm losses, education concentrated on grading and packing would be a great aid. For the shortage of farm labor the new government labor agency will afford relief. For reduction of transportation losses Mr. Brown counted on the co-ordination of the railroads under federal operation, making terminals now used by only one or two systems available to all railroads and thus causing prompter deliveries and shorter hauls, and on putting an end to the practice of holding loaded cars for a rise in the market or for use as warehouses.

Turning over partly unsound goods to volunteer associations for canning or direct sale at reduced prices would result in a certain degree of salvage, while eliminating the labor cost of salvage and costing the association nothing. Such foodstuffs might also be turned over to city departments which buy or sell food, or to charities. On imported foods the claims of the Treasury Department for duty must not be overlooked and the duty should be remitted on goods not sold for profit. Mr. Brown continued:

Little which has not already been said can be named now as to a remedy for the defects in retailing. Most of us have our own ideas about this end of the business and if some of them were applied by each one of us in our sphere of activity as customers we should unquestionably make some

progress. We are all willing enough to let somebody else do such things but most of us dislike to make the effort ourselves.

Dehydration, Mr. Brown said, as a method of conservation deserves very especial mention. Between six and seven hundred dehydrating plants are now operating in Germany. All over the world before the great development of canning in the past fifty years this process was used on a household scale. Experiments by the New York City Health Department last summer showed that the cost of dehydration was reasonable and that "the product left little to be desired and when reconstituted was for most purposes fully the equal of fresh material." The advantages to be derived from a development of this system in this country Mr. Brown gave as follows:

(a) The utilization of surplus now remaining in growing districts, which, for one reason or another, cannot be shipped in fresh condition, such reasons being, chiefly, too rapid ripening for the market to absorb, difficulty of obtaining labor, and unfavorable weather conditions preventing shipment.

(b) A very considerable development of the consumption of vegetables in America, thus relieving the present defective character of our dietary in this respect as compared with that of European nations.

(c) Consequent increase in production of vegetables.

(d) And proceeding from these, a lesser consumption of staple foods, such as grain, meats, and so forth.

(e) Finally, enabling the poor in the cities to purchase vegetables the year round.

The chief difficulty in the way of development of such an industry Mr. Brown believed to be the fact that there is at this time no market in civilian life ready for such materials. However, this need not, he said, deter persons who may be thinking of developing the industry, since, for any amount which can possibly be produced within the next two or three years, the American and Allied armies will furnish more demand than can be possibly supplied. The French army uses per man about one-half pound a day of this material, the Germans even more, both of them in the form of soups and stews. Certain elements in immigrant American life use such dishes for a large part of their dietary and Mr. Brown believed that no great educational campaign would be needed to start a considerable buying movement among the public.

During the past season farmers and truck-growers did their duty in increased production, particularly of perishables, but consumers could not use up a good portion of these and, consequently, much complaint was made of these crops going to waste and losing money for the producers. Mr. Brown said it is the duty of the rest of the country to supplement these agricultural efforts by establishing small, inexpensive dehydrating units near production centers, and that they can be most profitably located in combination with canneries, mills, or other manufacturing units furnishing buildings and power.

In conclusion Mr. Brown called attention to the following wastes: we use only a very small portion of our corn, oats and barley crops for food purposes—where other countries use a very much higher proportion: we feed our cheapest source of animal protein, skim milk—which makes up over one-fourth of our entire milk supply—to animals; too much food goes into arts like starch, sizing, foundry-covers, and so forth; and we could produce a vastly greater amount of various oil-seeds to prevent our suffering from "that fat-hunger, which, rather than protein-hunger, has been the greatest hardship in Germany." Slack loading of cars and improper stowing are also responsible for a great waste of foodstuffs.

Storing Canned Foods in the Open Can

By W. D. BIGELOW,
Chief Chemist, National Canners' Association.

ONE of the most frequent questions that is asked regarding canned foods is whether there is any objection to storing in the open can the unused portion of a can of food. This method of storage is applicable to condensed milk, since it is a sticky fluid, almost a paste, and is not easily transferred to another receptacle. On the other hand, it is a simple matter to punch two holes in the top of the can and pour the milk, as desired, from the can. It is difficult to understand why the advisability of storing other articles of



W. D. Bigelow.

food in the open can should ever arise. That method of storage is not convenient and appears to have no advantage. A partly-filled can is unattractive and there seems to be no good reason why a can should not be emptied as soon as it is opened.

Frequent inquiries show the interest in this question, however, to be so great that it was thought worth while to make a study of the matter in the laboratory. Moreover, from time to time general articles on the subject of food appear in the press, warning consumers against leaving food in the open can. Such writers picture evil results of various kinds that may follow the practice mentioned. Usually these results are stated in an indefinite manner, but occasionally writers become more definite and sometimes have mentioned the use of food left in the open can as a frequent cause of "ptomaine" poisoning. At first thought that suggestion would appear so preposterous as to be un-

worthy of notice. We must bear in mind, however, that many consumers do not understand that food poisoning is due to bacteria and that food, therefore, cannot be influenced by the kind of dish in which it is kept.

It was desired to study the question by following the practice, as nearly as possible, of a home that might store foods in the open can for a day or two after the can was opened. Unfortunately, it was not found practicable to do this. In the first place, it is known that the tin taken up by food is not uniformly distributed in a food consisting of solid and liquid portions, as most canned foods do. The solids usually contain more tin than the liquid portion. If, therefore, we would dip successive portions of food from a can at various intervals, the different portions might not have the same tin content at the beginning of the investigation. Moreover, one can frequently does not hold enough food for the number of examinations we desired to make. It was found best, therefore, to take a sufficient number of cans to get the amount of sample we desired, open them, comminute their contents either with a meat grinder or by hand according to the nature of the product, and mix thoroughly so that an adequate sub-sample could be obtained for analysis. The remainder was stored in one or more cans, as the case might be, until a second sub-sample was desired. The sample was then taken from the cans, thoroughly mixed, and the second sub-sample taken, when the remainder was again returned to the can. This operation was repeated as often as it was found advisable to repeat the analysis. The results obtained by this method exaggerate the condition that would obtain if each succeeding portion were taken from the top without disturbing the food remaining lower in the can. By the method adopted samples were several times mixed, thus exposing them to contamination and hastening their spoilage. Moreover, after each examination a new portion of the food was brought in contact with the metal of the container, instead of allowing one portion to remain in contact throughout the entire period, as would be the case when handled in the home. For both reasons, therefore, the results obtained in the table given below exaggerate the amount of tin that would be dissolved in the home from the open can.

During the period of study, the samples were stored in the laboratory at room temperature. At each time of sampling, the appearance, odor and flavor of the samples were carefully noted.

The methods employed for the determination of acidity, tin and iron were as follows:

Acidity: Forty grams of the samples were transferred to a 200 cubic centimeter graduated flask. The flask was filled with water, stoppered, and its contents shaken repeatedly until diffusion was believed to be practically complete; one-half hour is usually sufficient. The mixture was filtered through a rib filter and 100 cubic centimeters of the filtrate transferred to a beaker and diluted to at least 200 cubic centimeters. It is not necessary that this solution be clear. The starchy liquid obtained with some foods as, for instance, canned corn, does not interfere with the titration. To this solution was then added N/10 alkali

Foods Stored in Open Cans.

Product	Storage	Acidity cc. N/10 acid per 100 grams	Indicator	Milli- grams tin per kilo	Milli- grams iron per kilo	Remarks
Pumpkin	On opening	11.6	Litmus	321	26	Normal odor and taste
Pumpkin	On opening	....	Litmus	307	26	Normal odor and taste
Pumpkin	1 day	13.0	Litmus	311	30	Normal odor and taste
Pumpkin	1 day	12.4	Litmus	314	34	Normal odor and taste
Pumpkin	2 day	12.8	Litmus	352	32	Odor musty, taste stale
Pumpkin	2 day	12.8	Litmus	369	34	Odor musty, taste stale
Pumpkin	3 day	....	Litmus	406	30	
Pumpkin	3 day	....	Litmus	409	32	
Pineapple	On opening	111.0	Phenolphthalein	75.0	8.0	Normal odor and taste
Pineapple	On opening	108.0	Phenolphthalein	76.0	....	Normal odor and taste
Pineapple	1 day	108.0	Phenolphthalein	90.0	9.0	Normal odor and taste
Pineapple	1 day	107.0	Phenolphthalein	114.0	10.0	Normal odor and taste
Pineapple	2 day	111.0	Phenolphthalein	100.0	10.0	Normal odor and taste
Pineapple	2 day	112.0	Phenolphthalein	104.0	7.0	Normal odor and taste
Pineapple	3 day	....	Phenolphthalein	161.0	9.0	Odor and taste fermented
Pineapple	3 day	....	Phenolphthalein	153.0	9.0	Odor and taste fermented
Apples	On opening	61.8	Phenolphthalein	60	9	Normal odor and taste
Apples	On opening	61.6	Phenolphthalein	58	8	Normal odor and taste
Apples	1 day	62.8	Phenolphthalein	80	9	Normal odor and taste
Apples	1 day	60.4	Phenolphthalein	82	9	Normal odor and taste
Apples	2 day	62.8	Phenolphthalein	93	9	Odor normal, taste slightly fermented
Apples	2 day	63.2	Phenolphthalein	90	8	Odor normal, taste slightly fermented
Apples	3 day	....	Phenolphthalein	129	9	
Apples	3 day	....	Phenolphthalein	129	9	
Tomatoes	On opening	46.5	Litmus	72	8	Normal odor and taste
Tomatoes	On opening	....	Litmus	63	9	Normal odor and taste
Tomatoes	1 day	44.0	Litmus	63	8	Normal odor and taste
Tomatoes	1 day	45.0	Litmus	74	9	Normal odor and taste
Tomatoes	2 day	59.0	Litmus	94	9	Normal odor and taste
Tomatoes	2 day	58.6	Litmus	93	10	Odor musty, taste fermented
Tomatoes	3 day	....	Litmus	141	9	
Tomatoes	3 day	....	Litmus	146	9	
String Beans	On opening	9.7	Phenolphthalein	146	15	Odor and taste normal
String Beans	On opening	....	Phenolphthalein	143	16	Odor and taste normal
String Beans	1 day	9.2	Phenolphthalein	145	16	Odor and taste normal
String Beans	1 day	10.0	Phenolphthalein	131	17	Odor and taste normal
String Beans	2 day	15.6	Phenolphthalein	146	18	Odor musty, taste off
String Beans	2 day	16.4	Phenolphthalein	141	18	Odor musty, taste off
String Beans	3 day	....	Phenolphthalein	167	19	
String Beans	3 day	....	Phenolphthalein	153	18	
Corn	On opening	18.0	Phenolphthalein	13	15	Odor and taste normal
Corn	On opening	17.8	Phenolphthalein	11	15	Odor and taste normal
Corn	1 day	17.2	Phenolphthalein	20	14	Odor and taste normal
Corn	1 day	17.6	Phenolphthalein	11	15	Odor and taste normal
Corn	2 day	62.6	Phenolphthalein	13	16	Very sour
Corn	2 day	62.4	Phenolphthalein	15	15	Very sour
Corn	3 day	....	Phenolphthalein	9	17	
Corn	3 day	....	Phenolphthalein	13	16	
Kraut	On opening	94.8	Phenolphthalein	44	52	Odor and taste normal
Kraut	On opening	95.8	Phenolphthalein	44	50	Odor and taste normal
Kraut	1 day	99.8	Phenolphthalein	52	50	Odor and taste normal
Kraut	1 day	98.6	Phenolphthalein	50	50	Odor and taste normal
Kraut	2 day	103.4	Phenolphthalein	86	53	Odor slightly off, taste doubtful
Kraut	2 day	103.2	Phenolphthalein	63	52	
Kraut	3 day	...	Phenolphthalein	115	70	
Kraut	3 day	...	Phenolphthalein	111	72	

until it was just alkaline (phenolphthalein being used as indicator in some cases and litmus in others, according to the nature of the product). One cubic centimeter additional N/10 acid was then added, the solution heated to boiling and boiled for one minute, cooled to approximately room temperature and N/10 alkali added until the solution was again neutral. The total amount of acid added less the amount of alkali employed was calculated to 100 grams of sample.

Tin: The tin in contents was determined by the Baker volumetric method which has been tentatively adopted by the Association of Official Agricultural Chemists. This method is described in the Journal of the Association of Official Agricultural Chemists, Volume 2 (1916), No. 2, page 173.

Iron: The iron in contents was determined by the thio-cyanate colorimetric method of Thomson (J. C. S., 1885, 493; Sutton Volumetric Analysis, 10th edition, page 239).

The samples for this determination were prepared in the following manner:

Transfer the filtrate from the determination of tin to a beaker, make alkaline with ammonium hydroxid, and add 5 cubic centimeters of ammonium sulphid. Heat the solution below the boiling point on a hot plate until the iron sulphid coagulates and settles to the bottom. Separate the precipitate by filtrations and wash on filter paper with cold water containing 15 or 20 cubic centimeters of ammonium sulphid per liter. When the wash water has stopped dripping, place the funnel with filter paper on a graduated flask and leave exposed to the air for several hours to permit the oxidation of the precipitate. Dissolve the iron through the filter in the graduated flask with hot 1-4 hydrochloric acid and thoroughly wash the filter with hot water. Dilute this solution to volume and determine the amount of iron in an aliquot portion by the method given above.

If the solution in the graduated flask is colored so as to interfere with the colormetric determination of iron, it is transferred to a porcelain dish, evaporated to dryness, ignited to destroy organic matter, and the residue dissolved by digesting in dilute hydrochloric acid and again transferring to the graduated flask. This discoloration often occurs with meat and fish, and with such products it is often more convenient to ignite the filter paper and precipitated iron in a porcelain dish instead of dissolving through the paper with hydrochloric acid.

It will be noted that with pineapples, which are a very acid fruit, and to a somewhat less extent with apples, the tin content increased perceptibly from the beginning of the study until the fruit began to ferment, after which there was a marked increase in the amount of tin dissolved. With pineapples, this change occurred after two days' storage, and with apples after one day's storage. In both cases the acidity remained constant until the fermentation was evident to taste and smell. With apples the increase of acidity was very slight after standing two days, though the fermentation was detected by the taste. The pineapples were not titrated after they began to sour. With the other foods there was no noticeable increase in the amount of tin or in the acidity as determined by titration until the decomposition of the food was evident to taste and smell.

With pumpkin there appeared to be a small increase in iron content, though the apparent increase is so slight it may be due to analytical error. With the other foods studied the amount of iron did not increase perceptibly as long as the analyses were made, although they were continued in all cases until after the food had ceased to be edible. The amount of tin in these samples, as well as their acidity and iron content, was normal for the foods in question and the samples were representative of canned foods as they reached the consumer. The odor, taste and appearance of the samples remained normal until decomposition began and hence were the same as if stored in glass or porcelain. Notwithstanding the severe conditions of the test, the iron content of the samples was not increased and the increase of the tin content was insignificant.

When we think of the matter it is difficult to say in what way a tin can differs from a tin pan which is used in many homes for storing foods (especially milk). The whole-milk supply of our cities is held for many hours in tin cans with loose-fitting covers thus permitting free ingress of air. Moreover, milk cans are very heavily tinned and hence their contents would take up more tin than from a receptacle with lighter coating, as is true of canned food containers.

On general principles, the storage of food in an open can is not good housekeeping. When a dish in which food is served is removed from the table, the food remaining is, as a matter of course, transferred to a smaller dish. This is done partly so that it will occupy less space in the refrigerator and partly because it looks better. When a can of food is opened, its contents should be treated in the same manner and for the same reasons. A half emptied can, with particles of food adhering to the upper portion, is not an appetizing sight. The ragged edges of the opening detract still further from its appearance. For these reasons and for no other a can should be emptied when it is opened and what remains after the removal of a portion sufficient for a meal should be placed in a dish of suitable size.

Standards for Preserves, Jams, Marmalades and Jellies.

The Illinois State Food Standard Commission, after months of investigation, which included several public hearings, has reached the following conclusions in regard to glucose or corn syrup. All authorities testifying before the Commission agreed that:

First, glucose or corn syrup is a perfectly wholesome article of food;

Second, weight for weight on a dry basis, the food value of glucose or corn syrup is substantially the same as that of cane sugar.

In view of these facts, the Commission believes that cane sugar and corn syrup should be permitted in the manufacture of preserves, jams, marmalades, and jellies, and consequently the Commission has formulated the following standards:

Preserve, jam, marmalade is the product made from clean, sound, properly-matured, and prepared fresh fruit or fruits, sugar (sucrose), sugar syrup, honey or corn syrup, with or without spices and vinegar, and containing not less than 45 per cent of fruit, and conforming in name to that of fruit used.

The name of fruit or fruits and sweetening agent or agents shall be stated on label.

When more than one fruit is used, the label shall state them in the order of their predominance.

When more than one sweetening agent is used the label shall state them in the order of their predominance.

In all cases ingredients named on the label must be present in substantial amounts.

When two fruits are used in equal amounts, the name of the cheaper in cost of the two shall be stated first on the label.

When two sweetening agents are used in equal amounts, the name of the cheaper in cost of the two shall be the first sweetening agent to be stated.

Fruit jelly is the semi-solid, gelatinous product made by boiling clean, sound, properly-prepared fruit and sugar with water, concentrating the expressed and strained juice, to which sugar (sucrose), sugar syrup, or corn syrup is added, and conforms in name to the fruit used in its preparations.

The name of fruit or fruits and sweetening agent or agents shall be stated on label.

When more than one fruit is used, the label shall state them in the order of their predominance.

When more than one sweetening agent is used, the label shall state them in the order of their predominance.

In all cases, ingredients named on the label must be present in substantial amounts.

When two fruits are used in equal amounts, the name of the cheaper in cost of the two shall be stated first on the label.

When two sweetening agents are used in equal amounts, the name of the cheaper in cost of the two shall be the first sweetening agent to be stated.

The above regulations shall be in full force and effect on and after January 5, 1918, or until amended or revoked by the order of the Department of Agriculture.

DEPARTMENT OF AGRICULTURE,
Charles Adkins, Director.
John B. Newman,
Walter S. Haines.
Thomas P. Sullivan,
Food Standard Commission.

A Critical Review of the Patriotic Food Show

By MRS. MARY SWAIN ROUTZAHN,

Department of Surveys and Exhibits, Russell Sage Foundation, New York City.

This review was prepared solely as an office memorandum and not for publication. The author agrees to share these informal notes with our readers with the expectation that their character will not be misunderstood.—Editor's Note.

THE Chicago Food Show was significant because it was a patriotic educational enterprise, and it was managed as such throughout.

The plan was initiated by the State Council of Defense, whose members delegated its management to a business man, Mr. Louis Stumer. Mr. Stumer gave his services and carried out the work with a few salaried associates and a number of volunteers.

Floor Plan.

The floor plan was one of the most satisfactory arrangements that I have seen. The scheme was a division into five main sections of proteins, fats, sugar, fruits, vegetables and starches. As you entered the Coliseum you faced a semi-circular group of five attractively decorated archways leading into the five sections. Over each archway, in large illuminated letters, fully 6 inches high, was the name of the section. As you entered one of the sections you found a demonstration space, running the full length of it (40 feet) with an aisle on either side. This space was an oblong surrounded by broad counters. Facing the demonstration booth, on two sides, were a series of booths containing the commercial exhibits appropriate to that section. For example, when you had passed through the arch into the sugar section, in the center you saw demonstrations of the preparation of foods with the use of sugar substitutes. By reference to your Patriotic Cook Book you found the numbered recipe for the demonstration. Across the aisle on either side you saw displayed samples of the various sugar-saving products that were used in the demonstration.

Along the walls of the hall were government exhibits of the Department of Agriculture, the Fisheries Bureau, the Army and Navy, and so on.

This scheme made it simple to take in at a glance the whole Show so that you knew what there was to see and could choose what you would give your attention to. It did away with the confusion that is usually felt in an exposition where there is a bewildering array of booths and no particular logic in their arrangement.

Demonstrations.

The demonstrations were conducted by the home economics department of colleges and schools. There were students of the schools in constant attendance with teachers in charge. These demonstrations were made especially useful by the sale of a cook book prepared for the Show and containing recipes demonstrated at the Show. The cook book (72 pages) sold for 5 cents.

The two ends of the demonstration space were used for preparation of foods and the sides for serving samples of these foods to visitors and for answering their questions. Each demonstration booth had a complete kitchen equipment.

Uses of Signs.

All of the signs used in the demonstration booths and in the United States Food Administration exhibit

were supplied by the Food Show management. The demonstration divisions apparently turned in as much copy as they wished and the signs were made up on blank white cards with black letters, according to the sign writers' ideas of arrangement. There was no attempt to reduce the amount of copy or to suggest a lay-out which would display the words to advantage. The food demonstration booths were literally plastered with heavily-worded signs of many sizes and shapes that took away considerably from the attractiveness of their appearance. An opportunity was lost here in not placing this sign preparation in the hands of an exhibit director who would on the one hand help the exhibitors to make their material more interesting and suitable, and on the other hand guide the sign writers in making layouts that would present the material more attractively and clearly. Again, an opportunity was lost in not providing cards more attractive in appearance and not having definite rules laid down as to the places where such cards could be displayed.

The Management.

Initiated by the State Council of Defense.

Managed by a volunteer business man, Louis Stumer.

Exhibits directed by Robert G. Gould, publisher of the AMERICAN FOOD JOURNAL, Chicago.

Demonstrations directed by Mrs. Lynden Evans, director of the Chicago School of Domestic Science, assisted by the following schools and colleges:

Illinois University.

Chicago University.

Chicago Public Schools.

Lewis Institute.

Chicago School of Domestic Science.

A few volunteer committees were formed for the following special assignments:

Sale of space.

Advance sale of tickets.

Construction and decoration.

Advertising and publicity.

Auditing.

Hostesses.

There was no attempt to organize committees on a large scale or to get work done through committees.

The detail work was very largely carried out by the manager himself and by such individuals as would give their time liberally.

It was expected by the management that the cost, estimated at about \$20,000, would be covered by the sale of space and tickets. Their plan in case of a surplus was to use it for patriotic purposes.

Commercial Exhibits of Food by Manufacturers.

The sale of space for these exhibits was managed by a food specialist who was careful to admit only such exhibits as conformed to the Food Administration's program. Each exhibitor agreed to have his exhibit carefully censored and to conform to the rules laid down as to what claim he might make for his product, through his exhibit, printed matter, and demonstrations.

The importance of having a show of this kind managed by a non-commercial group was strikingly illustrated by the Chicago Show. It was necessary in a number of cases to censor exhibits and in some instances even after the Show had started, displays were entirely changed because they did not come up to the requirements. For example: one packer showed a tempting display of the meats whose use is especially discouraged by the Food Administration. This exhibit was changed to one showing the cheaper cuts of meats and the kinds and the substitutes for meat that the packer had for sale.

In several instances the extravagant claims of the exhibitor were caught up and stopped. Further, the commercial exhibits had but limited significance except as the exhibitors carried out suggestions made by the management. The manufacturers as a whole displayed very little imagination and originality in bringing out the features of their products that are most significant for food conservation. The manager of the Show told me that if he had it to do over again he would have made a much greater effort to show the exhibitors how they could make their displays educational and at the same time good advertising for themselves, then left to work out the idea for himself.

Publicity.

The publicity methods used were chiefly the following:

Newspaper publicity.

Newspaper advertising.

Advertising through billboard, car card and window card.

Window displays in large department stores.

Sales of blocks of tickets to large business and manufacturing houses.

The participation of large numbers of people, particularly school children.

Two special features that were used to make copy for newspaper use were:

A daily program of music and speaking, which included a number of prominent speakers.

The appointment of a woman prominent socially for each day with a group of assistants selected by her.

A striking feature of the Show that made good copy was the mess hall conducted by the Army on exactly the plan used in the Army camps.

The advance sale of large blocks of tickets was a particularly good method for increasing attendance. Whereas the regular admission price was 25 cents, employers and others could obtain tickets in advance for 15 cents each. Some of them bought tickets numbering in the thousands to distribute to employees. Department stores sold tickets at 15 cents in advance to their customers.

Window Displays.

An excellent example was afforded of the high degree to which window trimmers have developed exhibit technique in comparison with the exhibitors and educational leaders.

In connection with the Show the larger department stores each devoted one window to a display on food conservation. Comparing these windows with the displays at the Show itself, one would be immediately struck with the contrast between the effectiveness of the windows and utter ineffectiveness of most of the exhibit displays. Each of the window trimmers had an idea which he carried out with attention to every detail. One or two of them had exhibits that were among the best I have seen at any time. Incidentally

I learned that the Food Show management had first approached the managers of the department stores and having obtained their consent, arranged a meeting of window trimmers. At this meeting the purpose of the Food Administration was given and such literature as they desired distributed. Each window trimmer was then left to work out the idea for himself.

Summary of Criticisms of the Show.

Favorable Features:

1. The control of the whole enterprise by a non-commercial committee interested solely in making it an effective educational enterprise.

2. The prominent featuring of the educational demonstrations with the commercial exhibits made subordinate to the demonstrations.

3. The excellent scheme by which the cook book was made to serve as a guide to the demonstrations. A number posted in each demonstration booth corresponded to the number of the recipe in the cook book, thus visitors took home directions for carrying out what they saw.

4. The excellent floor plan and the attractive appearance of the whole Show.

5. The excellent exhibit of the Army in the form of a mess hall, serving meals to visitors.

6. The window exhibits in department stores as an advance advertising feature.

7. The advance sale of blocks of tickets through commercial and manufacturing firms and schools.

Bad Features:

Unfavorable Features:

1. The lack of provision for effective exhibits in connection with the demonstrations.

2. The unattractive and badly arranged signs used in the demonstration booths which contrasted with the finished appearance of the construction and equipment.

3. Insufficient use by the majority of the commercial exhibitors of opportunities for making their exhibits educational.

4. The lack of training of the demonstrators to meet the audience and get over to them the significant features of their demonstration. (This may have been improved as the Show progressed. My judgment is based on the first two days of the Show only.)

5. The musical program given throughout the afternoon and evening which made it extremely hard for the demonstrators to be heard. The music was in direct competition to the educational work of the Show.

Legislatures in Session.

The Sixty-fifth Congress, Second Session, now in session at Washington, convened on December 3, 1917, and will adjourn at noon on March 4, 1919:

The following legislatures are now in session or will be in session this year:

Legislature			
State	Convenes at	Date	Duration
Georgia	Atlanta	June 26	50 days
Kentucky	Frankfort	Jan. 8	60 days
Louisiana	Baton Rouge	May 13	60 days
Maryland	Annapolis	Jan. 2	90 days
Massachusetts	Boston	Jan. 2	No limit
Mississippi	Jackson	Jan. 8	60 days
New Jersey	Trenton	Jan. 8	No limit
New York	Albany	Jan. 2	No limit
Rhode Island	Providence	Jan. 1	No limit
South Carolina	Columbia	Jan. 8	No limit
Virginia	Richmond	Jan. 9	90 days

Report of the Chicago Patriotic Food Show

By LOUIS M. STUMER,

Chairman of the Committee in Charge of the Patriotic Food Show.

THE Patriotic Food Show held in the Chicago Coliseum, January 5 to 13, 1918, was under the direction of a committee of forty members appointed by the Illinois State Council of Defense. This Committee was composed of business and professional men, food manufacturers, distributors and retailers, domestic science experts, housewives and others. After broadly outlining the purpose and plans of the Show, the actual work of development and arrangement was turned over to an executive committee of six members, which opened offices about December 1, 1917.

One of the first things the Executive Committee did was to prepare a budget of probable income and expense. The amounts that could reasonably be expected to accrue from the sale of space and from admissions were estimated. Against these receipts were entered in proper classification the amounts to be spent for different purposes, such as rent of building, construction costs, signs and decorations, etc. Such other items of expense as developed from time to time were immediately added under the proper classification in the budget, so that at all times a graphic chart of the finances was available. This budget was faithfully adhered to with the result that the final balance sheet contained no disastrous surprises.

Fundamental Purpose of the Show.

The slogan, "What to eat and how to cook it," was accepted as correctly epitomizing the aims of the Show. Two divisions of activity were thus recognized—first, a display of manufacturers, distributors and retailers of commercial foods that best meet present needs; second, a complete and authoritative series of demonstrations by experts, showing how to conserve the foods needed by our soldiers and Allies, and teaching the right preparation and use of the foods advocated by the United States Food Administration.

The arrangement of exhibit space and the plans for educational demonstrations were made in accordance with the five chief groups into which foods are divided, namely, proteins, fats, sugars, fruits and vegetables, and cereals. A rectangular demonstration section was planned for each group, paralleled on either side by spaces for the commercial display of such food products as might properly be classified with each particular group. This arrangement utilized the central show space, leaving the space along the walls for other commercial and educational exhibits.

Sale of Exhibit Space.

As soon as the general plan was approved, diagrams of the floor space were printed and submitted to all concerns whose products were deemed acceptable. Space adjoining the demonstration sections, divided into units five by six feet with a few ten by twelve feet on the ends, was priced at \$2.00 per square foot; space along the walls, to be divided to suit the needs of the purchaser, was priced at \$1.50 per square foot. A brief statement of the purposes of the Show and an invitation to exhibit were sent out with the diagrams.

The invited exhibitors embraced manufacturers, wholesalers and trade associations all over the country. In soliciting exhibits stress was laid upon the value of

the enterprise as an educational and economic measure, making the commercial appeal secondary to patriotic service.

Local prospects were approached by volunteer workers and acquainted with the plans. Out of town prospects were solicited by letter. In accepting contracts for space, the right was reserved by the management to so classify and arrange exhibits as would best serve the purposes of the Show. One-third of the contract price of space was required to be paid at the time of signing the contract, the balance being due a few days prior to the opening date.

Admissions.

The admission price was fixed at twenty-five cents, children under sixteen years to be admitted free when accompanied by an adult. It was thought that this nominal admission would be sufficient to keep away those who would only come from curiosity if no admission was charged, or if the price was fixed as low as ten or fifteen cents. In order to reach such people as might want to attend yet who possibly would hesitate at spending twenty-five cents, a plan was evolved whereby tickets were made up in lots of five hundred and sold in advance to large business houses at a special rate of fifteen cents. The concerns purchasing these tickets then undertook to distribute them among worthy employees for whom the show carried a valuable lesson but who would not be likely to come at their own expense.

This plan brought a ready and generous response from large employers and no doubt was instrumental in bringing thousands to the Show who otherwise would have failed to receive its economic and patriotic message.

Publicity.

Publicity and advertising were directed by an expert who volunteered his services and took full charge. A professional press agent was employed for five weeks to write the news publicity. Carefully prepared articles outlining plans as they developed were submitted to the leading daily papers. From day to day interesting stories of the Show were sent out. Pictures of prominent individuals who co-operated with the Committee were given to the press, as well as pictures of other interesting subjects connected with the Show. This service was maintained until the close of the Show and resulted in much highly valuable newspaper publicity.

Ten thousand six-color posters, twenty-two by twenty-eight inches, from a design made especially for the occasion, were placed in store windows in the down-town and residential business sections. One thousand posters carrying the same design were erected on the elevated and suburban steam railroad stations. The agencies controlling elevated and surface car advertising generously donated space for cards in every car, thus reducing the expense to the Show for this kind of advertising to only the cost of printing the cards. Thirty large painted muslin signs were erected on buildings facing prominent street intersections in the business districts.

A unique and valuable advertising medium which attracted much attention was supplied through the courtesy of several of the prominent stores. In the windows of these stores during the week preceding the Show original and well-planned displays were made emphasizing the need of food conservation and calling attention to the Patriotic Food Show as teaching this conservation.

Two days prior to and during the Show space was taken in the amusements columns of the daily papers to announce each day's special features and to generally advertise the Show.

Demonstrations.

The program of demonstrations, conveying the real message of the Show, was held to be a matter of first importance. Inasmuch as no precedent existed for guidance in planning this feature, the imperative need of securing expert and capable guidance was recognized. A special Committee on Demonstrations was appointed, composed of five women from the leading domestic science institutions of the State. To this Committee was delegated authority to plan the educational program, to decide what lessons should be taught and to program the demonstrations to be given. The securing of adequate equipment for the five large working units and the organization of a force of skilled demonstrators, assistants, etc., were additional duties resting with this Committee.

The Committee selected a capable and experienced executive as secretary, who immediately came into the office and began work. The five different sections for demonstrations were assigned to five different institutions for direction, as follows: proteins, to the University of Illinois; fats, to the School of Domestic Arts and Sciences; sugars, to Lewis Institute; fruits and vegetables, to the Chicago Normal Schools; and cereals, to the University of Chicago. Later on a sixth section was planned for menus and menu making. This section was placed under the direction of an expert in these lines.

Each of the above institutions entered heartily into the spirit of the enterprise. A capable faculty member or other officer was delegated to direct each division and to co-operate with the Executive Secretary. Within a very short time an almost incredible amount of work was done by this organization. A complete and comprehensive program of demonstrations was mapped out for each section, covering the salient points to be emphasized. A total of 322 recipes was selected and examined for practical worth and scientific accuracy. Plans were made to demonstrate these recipes in the working sections to be arranged in either end of each demonstration space. A center section in each space was set aside for graphic and static exhibits of many kinds, planned to teach objectively some of the vital facts necessary to a complete understanding of the economic processes connected with the food problem. Copy was prepared for more than five hundred signs and placards to be used in explaining the demonstrations and exhibits. A complete force of demonstrators and attendants was organized for each section. Plans were completed for securing the food materials necessary. Attention was given to the innumerable details arising in the conduct of an undertaking of this size and importance. The Executive Secretary of necessity maintained constant supervision over all these activities.

A few days before the opening an experienced housekeeper took charge of assembling materials and

equipment. A little later she began selecting the force of maids, porters and dishwashers. Arrangements were made to construct two kitchens in out-of-the-way corners for washing utensils and dishes so that this work would not interfere with the conduct of the demonstrations.

Much of the material used was donated by public-spirited exhibitors, but many things had to be bought. Only the Secretary or the housekeeper had authority to make such purchases. Supplies were kept in a central storeroom under control of the housekeeper. Those in charge of the demonstrations made written requisition for such materials as they needed from day to day. At the close of the show materials on hand which had been purchased were returned for credit; supplies that had been donated were turned over to charitable organizations.

Official Recipe Books.

It was considered that the work of the Show could be greatly increased in efficiency and scope if the lessons taught could be taken directly into the homes. Particularly was it thought necessary to print the official recipes for the further and future guidance of housekeepers. After considering many plans it was decided to issue an official Recipe Book which should be sold at cost: to give the book away, it was believed, would lessen its importance to the recipient.

The first part of the book contained a comprehensive statement by the United States Food Administration of the gravity of our national problem. The relation of food to our Allies and to the outcome of the war, the present supply of foods as compared with the demand, and the importance of every individual doing his part, were some of the subjects discussed.

Then followed a plain and understandable treatise on food values, nutrition, choice of foods and the adjustment of diet to meet existing conditions. This part of the book was written by a recognized authority, who succeeded admirably in placing scientific facts in a form well suited for general reading.

The last section was given over to the 322 official recipes previously mentioned. These were divided into five general classes, sometimes headed by an explanatory paragraph giving general information of value to the housekeeper. The book contained 72 pages of the usual book size and was neatly bound in a durable cover.

These books were sold from stations located at intervals throughout the Show. Groups of women volunteered their services to handle the books on various days. The price was five cents, which covered the cost of printing and compiling. From the beginning the book met with hearty favor and sold far in excess of the most sanguine hopes of its compilers. The first edition of fifty thousand copies went so rapidly that another edition of twenty-five thousand copies was ordered before the close of the Show.

United States Government Co-operation.

From the inception of the Show, the co-operation of the United States Food Administration was enjoyed. An executive from the Illinois branch worked steadily with the Committee, his assistance not only lending the prestige of federal recognition but also being productive of much valuable counsel and suggestion.

Departing from its policy hitherto, the Administration planned an exhibit of its own problems and accomplishments and sent two experts on from Washington to supervise the display. Needless to say, this

showing of the Government's activities along lines of food conservation and control attracted great attention.

The United States Department of Agriculture made a large display of the relations of agriculture to food production and values. The Bureau of Fisheries showed some of the fish that are now being advocated as desirable foods. A model fish smoke-house in operation was one of the attractive features of this exhibit.

Both the Food Administration and the Department of Agriculture were helpful in many ways besides their exhibits. Lecturers and speakers from both sources appeared on the daily programs from time to time.

Lectures and Concerts.

A large auditorium with comfortable chairs and a raised platform for speakers was fitted up in the Annex Hall opening off of the Show proper. In the afternoon from 3:30 to 5:00 o'clock, and in the evening from 8:30 to 10:00 o'clock, this auditorium was crowded. Food economists, domestic science experts, government authorities, returned British officers, Americans who had been on the battle front—all took part in the programs. At times every seat was taken and the aisles crowded with standing people.

A Jackies' Band of thirty pieces from the Great Lakes Naval Training Station played a 30-minute concert preceding the speaking program and at other times played in the main building.

The entire program of lectures and concerts was directed by an experienced man who volunteered to assume full charge of this feature.

United States Army Exhibits.

Perhaps no other exhibit attracted the crowds as did the display made by the Quartermaster's Department of the United States Army. This exhibit showed the equipment used to clothe, feed, house and transport soldiers. Machine guns, motor trucks, gas masks and many other unusual pieces of equipment formed a part of the exhibit. The display was planned and assembled by a captain from the local Quartermaster's division, under whom was a squad of fifteen men detailed from the nearby army camps.

The mess hall, a restaurant in the basement, was operated by army cooks with army equipment, and served army rations typical of the rations actually used in the service. Hundreds of meals were served here daily and on different occasions the mess hall was forced to close on account of running out of supplies.

Special Exhibits.

In addition to the government exhibits, many special exhibits occupied space along the walls. In one corner was a complete dehydration plant in operation. How fruits and vegetables may be quickly dried and kept indefinitely without the use of sugar was demonstrated daily.

An instructive exhibit of milk and its manufactured products, with an exposition of their food values and importance as economical elements in diet, was made by the National Dairy Council. A modern ice cream plant in operation formed a part of this exhibit.

A complete brine refrigeration plant, driven by a 20 horse power motor, was installed and operated constantly. A large ice box for the display of fish was constructed in the protein section and supplied with refrigeration, keeping the temperature at 10 degrees Fahrenheit. Refrigeration was also supplied to some exhibitors of fresh meats.

The Fuel Conservation Committee of the State Council of Defense illustrated practical ways of saving coal and distributed literature designed to convince the people of the necessity of this economy.

The Library Section, U. S. Food Administration, under the Illinois division, installed a very attractive display to show how this agency disseminates information through the libraries on any and all subjects of conservation.

Several commercial exhibitors showed modern labor-saving equipment for homes, model kitchens, etc., directing attention to the necessity of proper furnishings to secure the highest household efficiency.

General Operation.

The assistance of experienced showmen helped to make the actual operation of the Show move along without friction. All construction work, signs and decorations were installed by professional contractors in these lines. The special needs of the Show, as they arose, were handled by the Committee or referred to someone having ability to dispose thereof. An experienced man volunteered to take charge of the doors and the sale of tickets, so that this part of the Show was exceptionally well handled.

A detail of both plain clothes men and uniformed police was furnished by the city authorities, making other policing unnecessary. A force of experienced laborers and cleaners was organized and kept things moving smoothly in this connection. Many conditions which otherwise might have been difficult to handle were easily met with the patriotic assistance of many capable volunteers. This sort of service had much to do with the success of the Show.

Recommendations.

Many exhibitors displayed keen understanding of the aims of the Show and planned their displays accordingly, but there were others who evidently expected nothing but the usual commercial and highly competitive food show. Through this lack of enlightened comprehension and through failure to take advantage of the opportunity for educational appeal, some of the exhibits failed entirely to either advance the cause or benefit the exhibitor. No doubt the needs of all would have been better met if all exhibitors had received specific rather than general instructions and suggestions as to planning exhibits, signs, etc., thus enabling them to catch the real spirit of the endeavor.

Owing to the necessity for handing out samples of the demonstrated foods to those interested, the distribution of samples by exhibitors was prohibited. Much the same condition existed with regard to the distribution of advertising literature. In order to give as much distinction to the Official Recipe Book as possible, the distribution of advertising recipe books was discouraged. These departures from the usual conduct of food shows occasioned considerable comment, but no serious complications. However, it is obvious that such restrictions should be clearly outlined to exhibitors when contracts are being signed, thus obviating to a large extent the possibility of later conflict.

To Cook Dehydrated Products.

In connection with an exhibition of dehydrated fruits and vegetables in the Grand Central Terminal, New York City, a pamphlet giving recipes for cooking these dehydrated foods has been prepared by the Mrs. Oliver Harriman Food Research Laboratory, copies of which may be obtained at that address. Recipes are given for the following dehydrated products: Irish potatoes, sweet potatoes, celery, onions, beets, carrots, string beans, wax beans, cabbage, turnips, corn, squash, soup vegetables, rhubarb, cranberries, apples, raspberries, cherries, blueberries, strawberries, pears, peaches, and apricots.

RETAIL PRICES,

Average Price per Pound	Average Price per 100 Calories		Lima, Ohio	Boston, Mass.	Providence, R. I.	Hartford, Conn.	New York, N. Y.	Trenton, N. J.	Philadelphia, Pa.	Baltimore, Md.	Washington, D. C.	Lynchburg, Va.	Atlanta, Ga.	Birmingham, Ala.	Buffalo, N. Y.
CEREAL PRODUCTS															
6.4	.39	Wheat Flour, No. 1, Pat., 49 lb. bag.....	320	343	315	340	340	350	350	300	320	320	350	360	300
7.0	.44	Rye Flour, Std., 24½ lb. bag.....	175	171	171	162	190	225	175	160	160	180	200	.....	.....
7.4	.45	Graham Flour, 10 lb. bag.....	75	70	70	70	80	90	85	70	75	90	80	.....	70
18.3	1.10	Shredded Wheat, 12 oz.....	15	12	12	14	13	12	12	15	11	15	12½	15	12
14.1	.86	Cream of Wheat, 1 lb. 12 oz.....	28	22	21	25	24	25	25	25	24	25	25	25	22
9.6	.53	Quaker Oats, 1 lb. 4 oz.....	12½	10	10	10	10	10	12	12	10	12	11	12½	11
7.8	.43	Rolled Oats, Bulk, lb.	10	7	7	7	7	7½	8	7	6	10	8	.....	10
11.8	.74	Rice, Fancy Head, lb.....	12½	11	11	12	10	13	15	11	11	15	11	10	10
23.5	1.44	Kellogg's Tstd. Corn Flakes, 8 oz.....	12	10	11	12	11	11	12	12	9	12	12½	12½	11
6.7	.41	Corn Meal, lb.	7	7	7	7	8	7½	8	6	6	6	5	5	7
8.9	.55	Hominy Grits, lb.	10	7	8	.....	8	9	.....	6	8	15	8	6	18
10.6	.65	Pearled Barley, lb.	10	7½	7	10	8	9	14	8	7	15	.....	.....	8
8.1	.69	Bread, lb.	10	6	7	9	10	10	7	8	8	10	10	10	8
18.5	.98	Crackers, Bulk, Soda, lb.....	22	20	17	18	18	20	20	18	16	20	15	12½	12
25.1	1.34	Uneda Biscuit, 4⅝ oz.	8	7	7	6½	7	6	8	7	6	8	7½	6	8
13.9	.85	Macaroni, Bulk, lb.	15	.....	13	14	11	18	20	.....	20	15	20	.....	13
11.2	.69	Corn Starch, lb.	12½	7	10	10	9	10	10	12	9	10	.....	10	7
SUGAR AND SYRUP															
9.1	.50	Granulated, lb.	9	9	9	9½	8	9½	9½	9½	8½	10	10	9	10
8.5	.59	Corn Syrup, 10 lb. pail.....	80	.....	100	.....	90	120	75	.....	80	60	80	75	.....
25.8	1.74	Comb Honey, lb.	22	29	30	30	30	30	35	.....	25	25	33	.....	25
FATS															
49.5	2.09	Bacon, Sliced, lb.	57½	45	44½	51	45	55	48	45	46	50	45	55	50
56.6	1.62	Creamery Butter, Fancy, lb.....	60	51	49	53½	60	60	65	58	51	60	50½	60	62
32.2	.79	Pure Leaf Lard, lb.....	33	31	32	34	34	35	30	32	30	32	28½	30	30
33.7	.91	Oleomargarine, Uncolored, lb.....	34	35	32	34	30	35	34	35	30	35	32½	35	31
67.0	1.67	Italian or Spanish Olive Oil, qt. tin.....	125	150	158	135	140	125	95	140	95	125	.....	.....	120
32.7	.82	Cottonseed Oil, qt. tin.....	75	.....	60	85	30	56	.....	60	.....	90	37½	.....	35
36.0	.90	Corn Oil, qt. tin.....	65	65	.....	77½	70	.....	.....	.....	.....	100	.....	.....	.....
25.5	.93	Peanut Butter, lb.	25	23	17	30	30	22	.....	.....	20	30	30	30	20
FRUITS															
19.1	1.45	Evaporated Apples, lb.	20	25	20	26	20	.....	23	.....	17	20	15	18	20
16.4	1.37	Evaporated Peaches, lb.....	20	13	15	20	18	20	18	15	13	20	15	15	15
13.2	6.29	Peaches Canned, No. 2½ Std., 1 lb. 13 oz.	32½	18	21	26	20	30	33	21	20	30	.....	15	22
14.5	2.07	Pineapples, Cnd., No. 2½, Std., 1 lb. 14 oz.	30	25	24	27½	25	32	33	30	22	30	.....	25	30
15.1	.97	Raisins, Seeded, per pkg., 15 oz.....	15	12	12	15	14	15	16	12	12	15	15	15	12
15.6	1.34	Prunes, Medium Sized, lb.....	18	13	15	15	16	20	18	15	13	15	17½	15	21
VEGETABLES															
3.0	1.00	White Potatoes, lb.	3	4	3	4	3⅔	3	3	5	3	3⅓	4	3⅓	3
6.6	1.47	Sweet Potatoes, lb.....	.....	7	8	6	6	6½	5	7	7¼	3⅔	4	4	8
4.9	2.45	Onions, lb.	6	5	4	6	5	8	4½	6	4½	5	5	5	5
17.9	1.13	Lima Beans, dry, lb.....	23	17	15	19	16	18	20	18	17	20	17½	17½	20
17.4	1.11	Navy Beans, dry, lb.....	20	17	16	.....	17	20	18	18	17	20	17½	17½	20
13.7	14.73	String Beans, Cnd., No. 2, Std., 1 lb. 3 oz.	15	15	14	16½	18	18	18	18	12	20	15	15	20
12.5	2.84	Corn, Canned, No. 2, Std., 1 lb. 4 oz....	13	14	15	19	16	17	20½	18	15	15	17½	15	22
13.0	5.20	Peas, Canned, No. 2, Std., 1 lb. 4 oz....	18	15	13½	18	14	20	20½	15	18	20	25	15	25
16.2	1.01	Split Peas, lb. ....	.....	13	13	.....	14	25	22	18	13	20	15	.....	17
19.8	1.06	Peanuts, Unshelled, lb. ....	.....	.....	24	17	13½	25	18	.....	25	.....	12½	11	.....
9.1	9.10	Tomatoes, Cnd., No. 3, Std., 2 lb. 1 oz..	20	18	19	20	20	23	20	18	22	20	20	15	20
5.5	4.58	Cabbage, lb.	5	5	4	4½	6	8	4	7	6	6	6	6	5
4.3	2.53	Beets, lb.	3	7	3	.....	6	.....	5	.....	10	5	.....	.....	5
3.6	2.00	Turnips, lb.	5	4	3	.....	2	3	3	5	.....	5	4	4	5
MISCELLANEOUS															
29.5	1.31	Cocoa, Bulk, lb.	30	26	27½	27½	20	40	42	35	25	20	40	.....	.....
46.9	7.82	Eggs, Fresh Gathered, Firsts, doz.....	68	75	85	77½	80	80	75	75	95	70	80	70	65
6.1	1.97	Milk, qt.	13	.....	14	14½	12	14	14	15	14	12	20	.....	14
34.8	1.67	Cheese, American, Cheddar, lb.....	40	32	27½	34	35	40	40	32	29	35	31	35	35
MEATS AND FISH															
29.7	4.57	Beef Round Steak, lb.....	32	38	27½	41	35	38	40	40	35	30	22½	35	26
36.9	7.38	Veal Cutlets, lb.	35	35	50	45	48	45	45	45	50	35	25	35	28
29.6	3.40	Leg of Mutton, lb.	30	.....	26½	.....	30	.....	30	.....	35	35	30	35	30
34.1	4.06	Leg of Lamb, lb.....	40	33	31	34	35	39	35	35	35	40	35	35	30
32.6	2.65	Pork Chops, lb.	35	33	31	35	40	36	38	38	38	35	30	30	30
46.3	2.44	Ham, Sliced, med. fat, lb.....	50	42	45	60	50	45	50	55	48	42	40	40	60
40.9	14.10	Chickens, Broilers, lb.....	40	35	35	38	46½	38	50	45	42	40	40	.....	38
23.8	6.61	Salt Cod, lb.	25	20	17	26	25	22	25	18	20	30	.....	.....	25
25.0	2.50	Salt Mackerel, lb.	25	21	16	20½	30	30	35	30	25	25	30	16	25
32.7	7.27	Halibut, lb.	35	40	55	31	.....	45	38	32	34	35	.....	.....	30
26.8	8.37	Whitefish, lb.	30	.....	30	.....	.....	50	.....	.....	20	30	.....	.....	24
29.0	4.53	Salmon, lb.	32	.....	45	.....	.....	.....	.....	.....	32	30	.....	.....	27
26.4	4.00	Salmon, Cnd., No. 1, tall, red Alaska, 1 lb.	30	25	22	26	25	30	25	25	25	20	25	27½	25
55.5	6.03	Sardines, Cnd., ¼, oil, key, Dom., 3¼ oz.	15	7	8	10	7	12½	15	9	8	10	7½	7½	25

BRUARY 1, 1918

Ohio	Indianapolis, Ind.	Louisville, Ky.	Lexington, Ky.	Nashville, Tenn.	New Orleans, La.	Little Rock, Ark.	Oklahoma City, Okla.	St. Louis, Mo.	Chicago, Ill.	Detroit, Mich.	St. Paul, Minn.	Vermillion, S. D.	Des Moines, Iowa	Topeka, Kans.	Denver, Colo.	Salt Lake City, Utah	Reno, Nev.	Seattle, Wash.	Portland, Ore.	Los Angeles, Calif.
40	315	330	337	308	350	300	265	290	304	300	285	310	290	275	265	270	325	265	270	305
65	163	190	175	.....	145	.....	165	145	135	146	165	184	165	171	130	160	225	150	184	150
65	75	85	70	85	75	85	67	.....	70	70	60	75	70	70	65	70	70	63	65	62
15	14	15	15	12	12½	15	15	12	13	14	15	15	12½	14	15	15	14	13	15	13
25	25	25	25	22	23	25	25	25	25	25	25	25	25	25	25	30	25	24	25	22
12	12	12	15	10	11	12	12½	10	12	12	12	15	12	10	15	15	18	13	15	12
6	8	8	10	8	7½	8	8	6½	6	7	8	6	7½	7	10	8	9	8	8½	9
12	16	12½	12½	9	10	10	10	8	12	12	15	12	15	12	10	12½	11½	12	12½	11
12	12½	13	13	10	11	11	12½	10	12	12	12	10	12½	12	15	15	12	11	12½	10
5	6½	6	6	5	6	6	7½	5½	7	7	6	7½	6	6	7	9	8½	7	7½	6½
6	.....	7	10	7½	6	6	9	6½	10	.....	10	.....	10	.....	10	13	8	8	10	7½
10	10	10	10	12	10	15	8	8	10	10	10	.....	.....	.....	10	15	12½	13	15	12
9½	8	8½	10	10	9	10	10	6	8½	7	9	10	.....	10	10	15	10	8	9	7
20	20	25	20	18	20	15	17½	18	18	20	20	22	20	20	20	20	16	15	20	14
8	8	7½	8	6	8	7	7½	7	7	.....	7½	7	8	7	10	8	7	5½	8	6
9	.....	12½	20	10	10	12½	12½	10	15	12	12½	16	15	18	10	15	15	10	10	12
12	14	12½	.....	7	14	11	.....	10	.....	.....	11	12½	15	.....	12½	15	15	13	12½	11
10	9	9	9½	9	9	9	9	8⅓	8½	8½	9	9	9	9	8	10	8½	8¼	9	8½
65	85	90	85	70	90	75	75	85	100	85	75	100	90	70	70	98	97	90	95	86
25	25	30	25	20	30	20	25	28	28	30	25	20	28	20	20	19	18	25	25	17½
45	47	55	50	45	48	45	45	40	49	45	50	50	50	55	55	60	60	50	50	57½
60	54	60	60	60	54	55	52	52	57	55	53	55	55	50	57	60	60	58	60	56
30	33	30	35	32	31	34	32	27	33	34	.....	35	33	30	35	33	35	30	40	27
35	34	35	35	35	35	31	30½	25	35	35	32½	38	30	32	35	35	40	37½	.....	35
25	112	125	125	160	110	.....	110	100	115	.....	125	175	135	95	.....	165	120	123	.....	105
65	64	60	70	60	50	.....	66½	60	58	.....	55	60	70	.....	90	45	60	74	65	43
70	69	65	65	55	50	.....	69	.....	70	.....	65	65	70	.....	90	45	65	64	70	62
30	35	25	30	25	25	25	30	23	28	25	22	25	.....	25	25	30	25	20	20	20
20	.....	.....	15	17	20	15	15	17	.....	22	20	.....	.....	15	20	18	16	17	20	19
18	18	15	16½	12½	20	15	15	15	18	17	15	15	15	15	15	17	15	16	17½	16
20	25	20	25	22	25	25	16	23	25	25	25	35	20	22	25	25	25	27	25	21
28	35	25	30	30	20	25	23	25	25	25	30	35	30	25	30	27	25	25	25	22
15	14	15	15	15	13	15	15	14	15	14	15	15	15	15	15	15	15	13	12½	12
15	19	17	18	12½	12½	15	12½	10	16½	15	15	15	12½	14	20	15	15	15	15	17
3	3	3	3½	3	3¼	3	2	3	3	3½	2½	2⅔	3	3	2	1½	1½	2	2	2½
8	8½	6	7	4	4	4	6	6	10	10	8	.....	10	6	8	8⅓	8	6	8	5
6	4	6	6	5	4	5	4	4	5	5	4	5	5	5	3	5	2½	3½	5	3
16	19	17	19	15	14	18	16	17	19	.....	18	20	17½	17½	20	20	17	17	17½	17
14½	18	17½	19	17	17	18	16	15	19	15	18	20	17½	16	20	18	16	15	16	16
15	23	15	15	13	12½	18	15	15	15	18	15	18	18	18	15	17	15	18	15	15
15	15	15	17½	14	12½	15	12½	10	15	18	15	15	12½	15	15	17	15	20½	15	14
15	19	14	17½	14	15	15	12½	10	16	15	12½	18	12½	15	15	15	15	19	15	15
15	23	15	.....	15	15	9	15	20	15	.....	18	20	12½	.....	25	15	16	10	12½	13
20	.....	20	.....	20	15	15	.....	20	25	.....	.....	25	20	.....	20	25	20	25	20	20
20	19	17½	17½	13	17½	20	17½	15	23	20	18	20	18	15	20	18	15	20	15	18
6	7	5	5	3	3	8	6	7½	7	7	5	8	7	7½	3	7½	4	3	3	2
3	.....	.....	.....	5	3	5	4	3	3	5	4	.....	5	.....	3	5	2	3	3	.....
3	.....	4	3½	3	3	3	4	2	3	5	3	5	5	3	3	5	2	3	3	.....
25	33	20	.....	28	30	35	27	30	25	25	25	30	30	20	45	.....	50	25	25	.....
75	75	80	87½	65	65	65	60	70	72	80	65	50	65	55	70	60	60	60	60	53
13	11	13	13	.....	15	.....	15	13	13	15	10	12	13	9	12	10	10	12	13	12
35	35	40	37½	32	33	35	35	30	35	35	35	40	35	38	40	35	35	30	35	30
28	25	30	30	30	28	25	24	22	28½	30	28	30	30	25	35	25	22	28	23	24
10	40	45	35	35	33	25	35	35	35	40	35	35	40	30	40	.....	30	25	25	38
25	.....	40	35	30	25	30	35	17½	28	26	25	30	25	28	30	25	27	30	30	.....
30	35	40	40	35	33	.....	35	25	35	30	28	30	30	38	35	32½	32	35	32	33
30	25	35	35	30	35	30	28	25	35	32	33	28	30	30	35	35	30	35	27½	34
15	47	45	42½	50	40	50	35	40	45	45	50	38	45	45	50	60	45	45	37½	50
10	.....	50	55	28	38	45	45	34	35	35	.....	25	.....	50	40	40	45	45	35	55
18	31	30	20	17	20	25	30	25	32	25	27	30	25	30	20	22½	.....	12½	.....	22
25	25	25	25	20	25	35	30	12½	25	27½	20	30	30	30	15	.....	.....	12½	30	25
10	28	40	35	.....	40	30	.....	30	30	30	28	30	30	25	30	35	35	20	30	24
28	.....	30	25	.....	.....	30	25	.....	30	25	10	30	25	.....	25	35	.....	.....	.....	12½
25	.....	.....	23	.....	23	30	.....	27	30	30	28	28	30	.....	25	35	30	20	27½	35
30	30	25	30	17	20	30	29	25	30	25	28	30	30	28	30	30	30	29	20	26
10	15	12	10	9	10	8	12½	8	12	10	7½	10	8	15	15	10	12½	17	15	9

BOOK REVIEWS

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph. D., Sc. D., F. R. S. (Edin.), Professor of Physiology at the Cornell University Medical College, New York City. Third edition, reset, 1917. W. B. Saunders Company, Philadelphia and London. 641 pp. Cloth, \$4.50 net.

Not often does one have the pleasure of reviewing so scholarly a contribution to the literature of food as is *The Elements of the Science of Nutrition*. The third edition was printed in January, 1917, and, as he states in the preface, the author revises the title of a decade ago, but in so doing follows strictly the line originally laid down—basing all statements upon demonstrable evidence. The nature of the book is such as to appeal strongly to the scientific worker and to the scientifically-minded. This volume of Dr. Lusk's should be on the shelves of every one intelligently interested in food and its necessary corollary—nutrition.

Every conceivable aspect of metabolism is treated in great detail and with an abundance of informatory data.

As might be expected, Dr. Lusk is obliged to leave the much discussed matter of "vitamines" in the twilight zone, although he is of the opinion that their composition "will some day be known, even as the chemical composition of epinephrin is known." In this connection the author sturdily maintains that vitamin is a misnomer and that the expression "food hormone" would exactly describe what is commonly referred to as vitamins.

Dr. Lusk's chapter on "Food Economics" is based upon statistical data gathered as late as 1916, a fact which renders it of more value than the bulk of similar matter in substantial books of reference.

A significant statement from the author's preface is that he has no intention of again revising the book, adding that in another decade the development of scientific knowledge will probably permit the formulation of the subject from the standpoint of physical chemistry.

THE COMMON SENSE OF THE MILK QUESTION. By John Spargo. The Macmillan Company, New York, N. Y. 351 pp. Cloth, \$1.50 net.

When Mr. Spargo wrote *The Common Sense of the Milk Question*, in 1908, the conditions surrounding the production of much market milk were pretty bad. At that time *The Common Sense of the Milk Question* was given a vast amount of well-deserved attention because it was highly desirable to apply a little common sense to the milk question. At present the many state and municipal laws, enforced as they are in fair measure, safeguard the milk supply to a much greater extent than was the case ten years ago.

The book is well worth reading, however, and reading carefully because of the fact that in a matter as important as the milk supply eternal vigilance is the price of purity. The increased consumption of milk is to be recommended by all who speak with a voice of authority, and every food control official should keep before him a picture of how bad milk supply conditions may become if any laxity is permitted in the enforcement of our laws.

U. S. Food Leaflets.

The Food Administration and the Department of Agriculture are issuing together a series of pamphlets on food conservation, designed to answer in specific and concrete form all the questions about which food and why. The conservation reason for using each food, the price of the food, and recipes for its best use are given. Massachusetts is translating these leaflets into eleven languages. As issued so far the leaflets are:

U. S. Food Leaflet No. 1. Start the Day Right With a Good Breakfast: Fruit, Cereal, Milk.

U. S. Food Leaflet No. 2. Do You Know Corn Meal?

U. S. Food Leaflet No. 3. A Whole Dinner in One Dish.

U. S. Food Leaflet No. 4. Choose Your Food Wisely.

U. S. Food Leaflet No. 5. Make a Little Meat Go a Long Way.

U. S. Food Leaflet No. 6. Do You Know Oatmeal?

U. S. Food Leaflet No. 7. Food for Your Children.

U. S. Food Leaflet No. 8. Instead of Meat: Cheese, Milk, Eggs, Beans, Peas, Cereals, Nuts.

U. S. Food Leaflet No. 9. Vegetables for Winter.

U. S. Food Leaflet No. 10. Plenty of Potatoes.

Report of Cold Storage Holdings, January 1, 1918.

The total stocks of **Frozen Poultry** reported by 279 storages amounted to 62,108,575 pounds, while the total stocks reported on December 1 amounted to 49,345,417 pounds.

The total stock of **Broilers** reported by 169 storages amounted to 8,611,701 pounds, while the total stocks reported by 187 storages on December 1 amounted to 8,751,472 pounds.

The total stocks of **Roasters** reported by 168 storages amounted to 16,416,905 pounds, while the total stocks reported by 179 storages on December 1 amounted to 12,288,257 pounds.

The total stocks of **Fowls** reported by 179 storages amounted to 13,036,964 pounds, while the total stocks reported by 202 storages on December 1 amounted to 8,617,455 pounds.

The total stocks of **Turkeys** reported by 201 storages amounted to 4,510,048 pounds, while the total stocks reported by 217 storages on December 1 amounted to 3,259,478 pounds.

The total stocks of **Miscellaneous Poultry** reported by 240 storages amounted to 19,532,957 pounds, while the total stocks reported by 254 storages on December 1 amounted to 16,428,755 pounds.

The total stocks of **Frozen Beef** reported by 352 storages amounted to 308,675,029 pounds, while the total stocks reported by 361 storages on December 1 amounted to 277,284,941 pounds.

The total stocks of **Cured Beef** reported by 341 storages amounted to 37,634,520 pounds, while the total stocks reported by 361 storages on December 1 amounted to 39,459,755 pounds.

The total stocks of **Lamb and Mutton** reported by 191 storages amounted to 7,073,157 pounds, while the total stocks reported by 187 storages on December 1 amounted to 6,241,598 pounds.

The total stocks of **Frozen Pork** reported by 311 storages amounted to 39,649,536 pounds, while the total stocks reported by 317 storages on December 1 amounted to 26,724,430 pounds.

The total stocks of **Dry Salt Pork** reported by 392 storages amounted to 243,470,758 pounds, while the total stocks reported by 428 storages on December 1 amounted to 149,872,010 pounds.

The total stocks of **Sweet Pickled Pork** reported by 478 storages amounted to 256,256,813 pounds, while the total stocks reported by 520 storages on December 1 amounted to 200,377,108 pounds.

The total stocks of **Lard** reported by 488 storages amounted to 51,257,040 pounds, while the total stocks reported by 548 storages on December 1 amounted to 43,548,013 pounds.

FOOD REVIEW

HEBE—Manufactured by the Hebe Company, Seattle, Wash. Prices, in tin (6 ozs.), 5c; (16 oz.), 10c.

Prominent food officials ask that we save fat, because we are the most extravagant of the nations in the use of fat; especially are we extravagant in the use of animal fats, some of which are so essential for the growth and maintenance of health.



The fat from whole milk, or butterfat, heads the list.

We are short on animal fat because the demand is greater than the supply.

France, for a number of years, has been experimenting on the food value of vegetable fats. Among these, cocoanut fat has fast come into prominence as a commercial product. Because of the highly satisfactory results obtained from its use and because of its keeping qualities it brought up the question whether a vegetable fat might not replace animal fat.

In order that the highly-refined fat obtained from the cocoanut might be marketed in most convenient and satisfactory form, several milk expert chemists, after much experimental work, finally discovered a process of scientifically blending pure cocoanut fat with skimmed milk (or whole cow's milk with a large part of the butterfat removed) and evaporated a large part of the water, bringing it to the consistency of cream. In other words, they have taken out the butterfat in whole cow's milk and replaced it with highly refined cocoanut fat, which, after evaporation of the water, has a consistency and color similar to evaporated milk. In much the same manner as the latter it is hermetically sealed in cans and sterilized.

Having completed their tests as to the production of this new product, which they called "Hebe—A Compound of Evaporated Skimmed Milk and Vegetable Fat," they put it into the hands of domestic science experts and practical cookery demonstrators, to learn what would be the results of using this product in the same way that the housewife has been educated during the last decade to use evaporated milk.

The results were most satisfactory. A prominent chef of one of New York's best hotels reports as follows:

"Every one of the following experiments have been satisfactory: coffee, tea, chocolate, cocoa, cereals, griddle cakes, custard, puff-paste, tomato soup, pea soup."

An average sample of Hebe by analysis contains approximately:

	Per Cent.
Fat	7.8
Protein	7.18
Milk Sugar	10.7
Ash	1.2
Total Solids	25.5
Fuel Calories, per lb.....	663

The fat consists principally of highly refined cocoanut oil, which is a wholesome vegetable fat.

Another well-known cookery expert, writing for one of the prominent magazines, reports as follows:

"Hebe and water in equal quantities may be substituted in all recipes calling for milk. In sweet dishes where Hebe is substituted for milk, use one-third less sugar. Hebe undiluted will take the place of cream in tea and coffee. It may be used with cereals."

Another nationally-known individual, after testing recipes, reports:

"I also tested Hebe in brown bread, doughnuts, sauces, etc., and find it satisfactory as a substitute for milk. Of course, I diluted Hebe with water for cooked dishes, but not in tea and coffee."

Hebe is made under most sanitary conditions. The whole fresh milk is received daily at the condensery. Under the supervision of milk experts, with careful testing, the animal or butterfat is scientifically removed, and highly-refined vegetable or cocoanut fat is then blended with the skimmed milk in absolutely clean, glass-lined tanks (vats). A large part of the natural moisture remaining is then evaporated in a vacuum which reduces it to the consistency of cream. It is hermetically sealed in specially-tested cans and sterilized to preserve its wholesomeness.

Cocoanut fat, as used in Hebe, is in a highly refined form. It is as near 100 per cent pure as science can make it. The cocoanuts are carefully selected and graded at their source before shipping to the refinery, where they are handled in the most modern sanitary manner. Experiments as to the digestibility of cocoanut fat have been very satisfactory.

The value of skimmed milk as a food needs only to be emphasized. It has lost most of the fat, but is correspondingly richer in protein, carbohydrates and ash. When used in combination with other foods it forms a very inexpensive source of valuable nutriment. Two and one-half quarts of skimmed milk will yield as much protein as a pound of lean round steak, at one-quarter the cost.

Another authority says:

"Any concern which seeks to conserve wastage in food products is to be commended, and when a product is as palatable, wholesome, nutritious and honestly sold as is Hebe, it is hoped that the manufacturer's efforts to gain a wide market for their new product will meet with success. Those to whom the cost of living is an important item (and that includes most of us these days) should try Hebe."

Hebe has already been established in markets in several states with remarkable success.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,250,140. Process for loosening the skins of tomatoes and the like. William H. Chapman, Portland, Me.

1,250,125. Apparatus for proving dough and the like. George S. Baker and John Cramb, London, England, assignors to Joseph Baker & Sons, Limited, same place.

1,250,427. Drying milk. Charles H. Campbell, New York, N. Y., assignor to Borden's Condensed Milk Co., same place.

1,250,567. Egg-preservative. Michael J. Davis, Brooklyn, N. Y., assignor of one-half to Mathew Micolino, New York, N. Y.

1,250,934. Duplex process for smoke-curing meats. Andrew C. Legg, Birmingham, Ala.

1,251,044. Process for fermenting straight dough. John Kaeppler, Niagara Falls, N. Y.

1,251,070. Food product and process of making same. Ralph H. McKee, Ridgefield Park, N. J.

1,251,093. Fruit and vegetable grader. Walter C. Palmer, Portland, Ore.

1,251,359. Coffee extract. Louis Etaix, Paris, France.

1,251,392. Attachment for coffee-roasters. Samuel Liberto, San Antonio, Tex.

1,251,476. Method of preserving perishable products. Thomas J. Clinton, Detroit, Mich., assignor to United Refrigerators Co., same place.

1,251,878. Means for preparing food products. Alpheus Fay, Louisville, Ky.

Opinions of Exhibitors at the Chicago Patriotic Food Show

The following letter was sent out to all exhibitors at the Patriotic Food Show held in Chicago:

Gentlemen: Will you kindly make use of the enclosed envelope in letting us know your opinion of the Patriotic Food Show recently conducted by this Council?

As you know, the Patriotic Food Show was primarily educational and was deemed necessary because of the actual crisis confronting us as a nation and as a member of the Entente Allies.

One of the most satisfactory features of the Show from our point of view was the enthusiastic support given it by such companies as yours and before closing our books upon the affair we want, if possible, to have from you a statement as to how the Show as a whole impressed you, both as a food manufacturer and as an American citizen.

Your prompt attention will be warmly appreciated by the State Council of Defense and by the writer personally.

Very truly yours,
PATRIOTIC FOOD SHOW COMMITTEE,
By R. G. Gould, in charge of exhibits.

The replies to this letter follow:

Aluminum Goods Manufacturing Company.

Your favor of January 16th addressed to our factory at Manitowoc was referred to the writer.

We were very glad to have had the opportunity to exhibit at this Patriotic Food Show. It gave us an opportunity to demonstrate to the public the economical features of the ware we are manufacturing and from reports which we received from a number of our large retail stores, customers are already calling for the goods.

We think so much about the results and success of this Food Show that if there are other such shows taking place in other cities, we certainly want to be with them.

WHUTTRINGHAUS, *Manager.*

Chicago, Ill., January 26, 1918.

American Can Company.

Your favor of the 18th instant received and it gives us pleasure to reply by stating that the Patriotic Food Show was, in our opinion, a well-organized and attractively-arranged exhibition of great educational value and it is a matter of great regret that the severity of the weather interfered with the attendance, especially during the first few days, as we think every citizen of Chicago attending this Show would have received inspiration and help of benefit to the individual and the people as a whole.

As you know, the participation of our company in this Show was for the purpose of familiarizing the public with the fact that certain foods are being successfully marketed in economical packages of fibre and interesting them in these containers as a matter of patriotic service. We are unable to trace any direct results from our efforts and can only refer to the fact that the public showed considerable interest in our exhibit of packages and seemed to be actuated by a sincere desire for information.

H. G. EDWARDS, *Asst. Dis. Sales Mgr.*

Chicago, Ill., January 24, 1918.

Anchor Mills (dealers in various cereal meals).

Replying to your letter in which you ask us to advise you what good the Food Show has done us, will say owing to the storm, bad roads and shortage of stock we are sorry to say that we have not given the matter any attention and therefore are not in a position to give you a detailed answer.

Chicago, Ill., January 23, 1918.

Arbuckle Brothers ("Yuban" Coffee).

We thank you for your compliments regarding our exhibit with other manufacturers of food products at the Patriotic Food Show recently conducted by the Illinois State Council of Defense, and extend our appreciation of your work as Chairman of the Board of Exhibits which contributed so much to the general success of the exposition.

As manufacturers of coffees and other products we were glad of the opportunity of participating in the Food Show and were particularly pleased to note the entrance of so many other high class manufacturers of food products.

A feature which strongly impressed us was the admirable

arrangement of the various exhibits and demonstrations, set out in groups representing the food values of the products—an object lesson in preparedness and an exhibition of conservation.

The silent exhibits—the exhibits without demonstration—represented quality in food products and as the keynote of the Show was economy, visitors were undoubtedly impressed with the idea that the purchase of products of quality is true economy. Our own exhibit—Yuban Coffee—has, we believe, gained some advantage from the association of this idea of quality with economy.

As an American citizen the writer was gratified and impressed with the support given to the Show by the public and the eagerness with which it sought information, and instruction on the foods prepared by U. S. Government and our own state organizations. It was a practical patriotic demonstration for which the State Council of Defense is entitled to high praise.

Congratulations to the State Council on the success of the Patriotic Food Show—a success from all points of view, demonstrations, exhibits, attendance, entertainment and educational and patriotic lectures.

W. N. GREEN.

Chicago, Ill., February 7, 1918.

Armour & Company.

Referring to your recent form letter:

We are of the opinion that the recent Patriotic Food Show accomplished a great deal of good in this community. One hundred and sixty thousand people, mostly of the discriminating housewife type and of the higher order of intelligence, can't have attended an affair of this kind with its many valuable features without having learned considerable on the many ways of preparing food and the added need for food conservation, and particularly that the use of food alternatives is very necessary at this time.

We know from our own experience, from questions asked at our various exhibits, that the general public regarded this affair as highly educational and of great value to them.

W. LAUGHLIN, *Advertising Department.*

Chicago, Ill., January 29, 1918.

Armour Grain Company ("Armour's Oats").

Referring to your favor of the 17th regarding the recent Patriotic Food Show. The Armour Grain Company had an exhibit of Armour's Oats and our people in charge state that they considered it a very successful Show. I personally attended three sessions and considered it a great success, disregarding the bad weather.

G. E. MARCY, *President.*

Chicago, Ill., January 19, 1918.

A. H. Barbour & Company (cheese).

Replying to your letter of the 17th asking us for our opinion of the recent Patriotic Food Show, we wish to say that we believe that despite the unfavorable weather during the Show it was, in our opinion, undoubtedly a success.

We believe that the demonstration of economical food dishes will be of unestimable value. Insofar as our own commodity, cheese, is concerned, we feel very well pleased with the publicity that was given it and believe that this publicity will not only benefit the people, in showing them how to use cheese, but will, of course, benefit us as well.

Chicago, Ill., January 21, 1918.

Berhalter Health Foods Company.

We cannot see how there can be any question about the Patriotic Food Show recently held at the Coliseum being the most educational food propaganda to teach the American people food economy and wheat substitution that was ever held in this country.

This company has never witnessed greater co-operation both from the management and the exhibitors, and from our point of view the Show was a great service to the country and our Allies, and a patriotic duty well done.

ANTHONY A. BERHALTER, *President.*

Chicago, Ill., January 29, 1918.

Booth Fisheries Company.

Referring to yours of the 17th ult.

We were very much impressed with the Patriotic Food Show and are satisfied that if bad weather had not interfered that the amount of educational value secured would have been worth many times the effort set forth.

From our own point of view we consider that a new interest has been awakened in the fish business by those who attended. It is through educational means that it will be possible to secure for the people of the United States a greatly increased quantity of fish food. This increased food supply can be secured in a way that will compare most favorably with the costs of other kinds of foodstuffs, provided the various departments of the Government can get the necessary support from Congress in the way of appropriations necessary to carry on extension work.

All of our boys who attended to our booth were very much impressed by the Show and with the attitude of the people who attended. There seemed to be much more of a desire on the part of the public to learn something at this Show than the average food shows. It was educational both to the public and to our employees.

We made it a point to talk with various ones who attended the Show and found that they were very much impressed with the various features. There is no doubt in our minds but what a great many households are practicing economy along the lines laid down at this Show.

There is no doubt but what some of the new kinds of fish that are being exploited by the Bureau of Fisheries secured some very good advertising at this Show, and we have reason to believe that the sale will be greatly extended on these kinds that have real merit and that can be handled to advantage in this part of the country. Coming at this time of year there is no doubt but what it will also result in some demand being created for frozen fish. It remains to be seen, however, to what extent the demand will be increased for frozen fish because it is a very difficult matter to have the necessary arrangements made in a city like this for the proper support on the part of dealers in a movement where there is so much question of doubt in their own minds.

P. L. SMITHERS, *Vice President and Gen. Mgr.*

Chicago, Ill., February 2, 1918.

Bunte Brothers (cocoa products and candy).

Replying to your favor of the 17th inst., the writer has had a number of years' experience, both as manager of, or exhibitor at, trade shows and food shows of the same order, in various parts of the United States.

We take pleasure in stating that in the matter of floor arrangement and general management, we have never seen anything more effective than was the Patriotic Food Show given at the Chicago Coliseum, Jan. 5-13, under the auspices of the State Council of Defense.

We are glad to be able to contribute a little towards the success of this enterprise, and you will always find us heart and soul with any safe and sound movement for the conservation of the nation's resources.

EARL C. MAY, *Department Manager.*

Chicago, Ill., January 18, 1918.

George B. Calkins (representing Burnham & Morrill Co., dealers in fish).

Answering your letter of January 18th, I very much regret to state that I was absent during the Food Show and unable to judge as to its educational benefit.

I do know, however, there were a good many things that could be materially improved, but this is not surprising considering the extent of the Show and the short time in which it was done.

Chicago, Ill., January 19, 1918.

Chicago Tofu Manufacturing Company (soya bean products).

We beg to acknowledge the receipt of your favor of the 18th instant with regard to the result of the Patriotic Food Show from our viewpoint. We would like to say that it was very satisfactory not only because we received great attention from the people from all over the country, as we distributed over 40,000 circulars during the Show, but also because we have received a great number of letters from prominent persons asking for samples to be shown in their local food shows since the Patriotic Food Show. This fact proved how wide the effect of this Patriotic Food Show is.

S. Y. WONG, *General Manager.*

Chicago, Ill., January 26, 1918.

Corn Products Refining Company.

You ask our opinion of the recent Patriotic Food Show and we tell you, without any hesitation, that we are well satisfied with the results. A Show that could draw an attendance of 152,000 persons in face of the severest week of weather in Chicago's history, speaks well for its management.

However, if you will permit this criticism, some of your regulations, we think, were capable of modification. The Show was financed by manufacturers who were invited to

participate because of the war products that they made. Consequently they should have been given every opportunity to impress their wares on the consuming public. To this end they should have been permitted to pass out samples, to conduct cooking demonstrations (which would not seriously conflict with the official demonstrations) and to take orders. Participation in a Food Show is at best an expensive item; an opportunity should have been given to equalize this expense by full publicity to the products exhibited. In this respect, in our opinion, the Show could have been improved.

We heartily congratulate the State Council of Defense on the wonderful Show it gave Chicago.

A. E. CULL.

Chicago, Ill., February 6, 1918.

Douglas Company (corn oil and cornstarch).

In reply to your favor of the 17th inst., we are pleased to say that we think the Patriotic Food Show was a fine success.

The information obtained by consumers at the Food Show as to the intelligent use of foodstuffs, especially the so-called substitute foodstuffs, should be of great benefit to all concerned. This company was very glad to do what they could to aid in the success of the enterprise.

L. H. PIPER, *Mgr. Oil Department.*

Cedar Rapids, Iowa, January 18, 1918.

Downey-Farrell Company (oleomargarine and nut margarine).

In reply to your favor of the 17th, we wish to state that we think the Patriotic Food Show recently held at the Coliseum was the right thing—just at the right time.

The fact that it was not for "profit"—but was held more or less under the auspices of our Government, made every one very enthusiastic, and it is the writer's personal observation it was a wonderful success.

As a school for *thrift*—it could not be beat, and we believe it is now showing results in thousands of homes. We only hope the Government will establish permanent Food Demonstrations in department stores of the large cities of the United State. It will teach people the thing that interests them the most and get them in closer touch with their Government—making them realize they are part of the Government.

We wish to extend our congratulations to the management. The layout according to classification of foods was the best the writer has ever seen at the Coliseum.

W. F. FARRELL.

Chicago, Ill., January 18, 1918.

Drying Systems, Inc. (dehydration apparatus).

In our effort to adequately express our opinion of the Chicago Patriotic Food Show, we have generally employed the words "splendid success."

The Chicago Patriotic Food Show, as the pioneer undertaking of its kind, afforded the Chicago public an exceptional opportunity to familiarize itself with new ways and means to assist the nation in its "Food Will Win the War" campaign. But in the writer's opinion the Show afforded an opportunity even greater than this, in that it demonstrated to people who could not be reached in any other way, the many important scientific developments in the art of preparing and marketing food. It occurred to us that the Food Show, rather than attempting to teach our people how to sacrifice, taught them how to avail themselves of the many delicious foodstuffs which are available in quantities, which cannot be used for shipment overseas, and which are more palatable and nutritious than many of the foods which they replace.

As manufacturers we found the Food Show an important and profitable venture. We had an opportunity to clearly demonstrate, to substantial and intelligent people, some of the remarkable possibilities of dehydration, and we secured an interest and understanding which we believe will do much towards the ultimate realization of our ideals. We secured more than 1,200 individual inquiries, representing 35 states, the District of Columbia, and Canada. In addition to these, we secured more than 6,000 individual inquiries, concerning dehydrated products and dehydrating machinery, from the State of Illinois.

Nearly 5,000 of these are from Chicagoans and include some of the city's representative people.

It is through such educational undertakings as the Patriotic Food Show that the American people will be brought to an appreciation of their own resources and taught how to realize the value of many food products which are now being ignored by the average person, who does not know how and when to use them.

If our support was enthusiastic before the Show, it has been magnified many times since its culmination.

May we add the slight weight of our congratulations to that sense of accomplishment which must already have fully requited yourself and the committee.

J. E. BOLLING, *Chief Engineer.*

Chicago, Ill., January 18, 1918.

J. F. Elam Sales Service (undegerminated corn meal).

Your letter of the 17th is before me.

Replying, it is my opinion, as an American citizen, that the movement which this Show initiated is one which should be adopted in every business center of the country. I make this statement solely from the degree of interest evidenced by those who visited the Show and with whom it was my privilege to confer.

The educational features were received with more than ordinary interest and intelligence, and as the purposes of the exposition were educational, I would consider that these purposes had been served in a splendid manner.

Had the weather been more favorable the results of the Show would have been far in excess of what they were, as you fully realize.

My opinion as a food manufacturer is the same as that expressed above, for in these times of national stress the primary interest of all individuals should be the welfare of the country and of its Allies in the war.

Permit me, at this time, to express our appreciation of the completeness of the exhibits. Considering the short time at your disposal, I think the results were beyond reasonable expectations.

J. FRANK ELAM.

Chicago, Ill., January 19, 1918.

Eney Shortening Company ("Esco").

Replying to your letter of January 17th, as to our opinion of the Patriotic Food Show, will say that we believe that the Show was a success from every standpoint and when we consider the short amount of time you people had to put it together, we consider the work done remarkable.

The arrangement of the interior decorations, etc., could not have been more beautiful and the concrete method used in showing the various kinds of food products was indeed commendable.

As American citizens we might say that we were rather startled at the number of people who attended the exhibit, and when one considers the weather he certainly will not have lost faith in the people to respond to every patriotic call, because it requires a great deal of grit, on the part of the ladies especially, to attend a show under such circumstances.

For our own selves we might say that it is rather interesting to know that we have had numerous inquiries concerning our product, from as far away as Wyoming, and this is unusual as we are not a very well advertised concern.

We want to thank the gentlemen in charge of the work for their interest in our behalf and especially compliment the folks who so beautifully laid out the interior arrangement.

S. ENEY, JR., *President.*

Chicago, Ill., January 21, 1918.

General Chemical Company ("Ryzon").

Replying to your letter of the 18th regarding the Patriotic Food Show, allow us to say that as a whole we consider it the best advertising medium of this nature with which we have ever been connected.

As American citizens and food manufacturers it gave us an opportunity of getting directly in touch with interested consumers, as well as with home economics people who are especially interested in our product.

In marketing Ryzon, The Perfect Baking Powder, we have from the beginning realized that an educational campaign was necessary and desirable, and we appreciated fully the opportunity of co-operating along these lines. We have for months been following out the suggestions and advices from the Food Administration in Washington and shall continue to conform our work to its standards.

We feel that the Patriotic Food Show was intensely educational not alone to the general public, but to the exhibitors, and to the school and college people who attended.

It seems to us that the more opportunity there may be for constructive advertising of this nature, as well as for a better understanding of the aims and ideals of high class manufacturers by the educational forces of this country, the more good will result, and we are very glad to have had a part in the first Patriotic Food Show.

HARRIET COLE EMMONS, *Manager Service Staff.*

New York, N. Y., January 23, 1918.

The Hebe Company ("Hebe").

We desire to convey to you and your associates, who conceived and handled the Patriotic Food Show at Chicago, our congratulations on the success that attended your efforts.

We are pleased at having availed ourselves of the privilege of presenting Hebe to the consuming public at your Show. The arrangements of the exhibits, the manner in which the proper use of well-known food products was demonstrated, and the merits of new products made known, impressed the average visitor to the Show in a way that no other ordinary show could have done.

C. H. HEALY, *Dir. Mgr. Sales.*

Chicago, Ill., January 29, 1918.

The Hinsdale Sanitarium.

We are in receipt of your favor dated yesterday. We had been thinking of writing you before this but neglected to do so until we received your letter.

The Patriotic Food Show was highly satisfactory to us. We believe that it served an excellent purpose and that it will be the means of doing a great deal of good along the lines of food conservation so much needed by our country at this time. Those of you who made the Food Show possible did a splendid thing, especially as you entered an entirely untried field. It was a success in every way and accomplished the purpose for which it was organized. We are indeed glad that we had the opportunity of taking part in it.

In behalf of our sanitarium we wish to thank you for your personal courtesies in connection with the Show.

JULIUS PAULSON, *President.*

Hinsdale, Ill., January 18, 1918.

Horlick's Malted Milk Company.

We have your letter of the 17th inst. and note your inquiry in reference to the Patriotic Food Show recently held in Chicago.

We think the Show was of excellent character, being attended, as it was, by the better classes and those interested in the preparation of foods, and feel it was a decided success from an economic and industrial standpoint as it educated the people to conserve and make the most of their food supplies and to help win the war. One should consider it not a duty, but rather a privilege to be able to attend a Show of this nature.

We wish to thank you for the courtesies extended to our representatives in attendance and for the co-operation and assistance you gave them.

Racine, Wis., January 22, 1918.

Hydrox Company (for the ice cream manufacturers of Chicago).

Replying to yours of the 18th, asking us what our opinion was of the recent Patriotic Food Show conducted by the Illinois State Council of Defense, I am glad to have an opportunity to express my enthusiastic appreciation of the way it was conducted, the opportunity we had to participate in it, and the good it has done from an educational standpoint.

I was there almost every day and talked with a great many of the visitors and every one stated that it was one of the most important things that had been done in pointing out to the housewife how to conserve and how to economically take care of many of the problems she has in the kitchen.

I sincerely hope that every large city in the United States will undertake just such a Show as was given here and I believe it will receive the commendation of every community in which such a Show is conducted.

THOS. H. MCINNERNEY, *President.*

Chicago, Ill., January 24, 1918.

The Interstate Cotton Seed Crushers' Association.

As an exhibitor and visitor at your Show this month, I was deeply impressed by the timely importance of your undertaking and by its impressive educational value. Your enterprise in presenting such practical lessons in food conservation is worthy of national emulation, and it is unfortunate that weather conditions so restricted the attendance.

I am confident that other exhibitors feel as I do—grateful for the opportunity you afforded for showing the housewives and home providers something of the wide range of food alternatives available to them—grateful for the chance they had to do their little part in impressing the public with the possibilities as well as with the necessity of food conservation.

The average citizen is anxious to serve his country in this great emergency, but does not know how to do so. Herein

is the nib of your splendid efforts, which should have a very far-reaching influence.

It is gratifying to learn that similar shows are already arranged for in other cities throughout the country. There is no more patriotic service that our manufacturers and producers of foodstuffs could engage in and thus round out and complete the wonderful work of Mr. Hoover and his associates in the National Food Administration.

LOUIS N. GELBERT,

Asst. to the Pres. and Mgr. Educational and Publicity Bureau.
Memphis, Tenn., January 22, 1918.

John J. Jelke Company (oleomargarine).

Referring to the recent Patriotic Food Show, it is our opinion that this was a very useful and timely undertaking.

We feel sure many ladies learned how to economize in their table expenses and to use these foods of which we have plenty and to save the foods which are most needed by our armed forces and Allies.

EVERETT I. WOOL.

Chicago, Ill., January 21, 1918.

Kellogg Products Company, Inc. (nut margarine and coconut oil shortening).

It was our great pleasure to attend the Patriotic Food Show conducted by the State Council of Defense at Chicago, and we wish to repeat our comment to you that it was by far the finest food show that we have had the pleasure of attending for a good many years.

It is our belief that the manufacturer and advertiser today, if he would increase his market, must teach the people how to use his product. Some of us rely upon the retail dealer to be the teacher; others rely upon the printed word; but most of us will agree that actual demonstration, such as was conducted by your experts, when people have an opportunity to ask questions, is the best form of education that can be adopted. If more food shows could be conducted in this impartial fashion of teaching the people how to use new foods, without over-emphasizing any one particular brand, the results, we believe, would be of exceptional value to everybody concerned.

We congratulate you, Sir, on the splendid results which crowned your efforts.

C. K. WOODBRIDGE, *General Sales Manager.*

Buffalo, N. Y., January 21, 1918.

J. L. Kraft & Bros. Company (cheese).

Complying with your request of the 17th, am pleased to say that the Patriotic Food Show turned out to be a much better success than we expected, owing to the unfavorable weather conditions. The class of people attending was just the kind that we were anxious to meet; they seemed interested in our printed matter, and we have no doubt but that we will derive considerable benefit and increased sales of our Elkhorn Cheese—31 Varieties—In Packages—as a result; in fact, we have already noted a considerable increase this week in the grocery department of the State Street stores, which are the only ones we handle direct, and therefore is the only opportunity we have of noticing any actual increase in sales.

JOHN H. KRAFT, *Sales Department.*

Chicago, Ill., January 19, 1918.

Landers, Frary & Clark (kitchen equipment).

Replying to your letter of January 18th regarding the National Food Show. We feel perfectly safe to say that this exhibition has done a wonderful lot of good to the people who availed themselves of the opportunity of going to this Show and seeing what could be done to conserve the Nation's rations. For ourselves we brought before the public a number of articles which we manufacture along the lines of food conservation.

We are sure you will be interested in knowing that a representative of Mr. O. H. Benson, Secretary of Agriculture, Washington, D. C., who happened to visit our booth was so impressed with what our special Grain Mill would do that he felt quite sure that Mr. Benson would want him, as well as other representatives of this Department, to recommend this mill throughout the entire country.

We feel sure that this Show has done a world of good, and was just the right thing at the right time. One thing that I think that this Show has demonstrated to the people is, the many ways we can all help to do just the thing our country wants us to do, yet have all we need and plenty, and still do without and conserve on those things our Allies and our Army and Navy need.

E. O. GSCHWIND, *Manager.*

New Britain, Conn., January 19, 1918.

Libby, McNeill & Libby.

Replying to your recent letter, believe the Patriotic Food Show held under the auspices of the State Council of Defense, proved beneficial to both citizens and exhibitors. The war-time foods and cooking materials which were demonstrated should give Chicago housewives practical help in arranging patriotic food-saving menus.

G. L. CULVER, *Advertising Department.*

Chicago, Ill., February 8, 1918.

W. F. McLaughlin & Company (coffee).

Referring to your letter of the 17th, regarding the Patriotic Food Show. We are not experts in the food show line, as for a great many years we have not felt it worth our time to do this kind of advertising, but we felt that this Patriotic Food Show would appeal to the best people of the city and be a good place to have our high grade Manor House Coffee shown.

We believe from the reports of the young lady who stayed in our booth that it was a beneficial advertisement, and the writer's wife and other ladies who visited this Show expressed themselves as very much interested in it.

E. B. BLAIR, *Advertising Manager.*

Chicago, Ill., January 18, 1918.

Albert Miller & Company (for the potato dealers of Chicago).

In reply to yours of the 18th would say that the most regrettable feature of the Food Show was the inclemency of the weather. It was really surprising that we got out as many people as we did. I feel that the committee in charge is entitled to a great deal of credit for the very fine showing. The Potato Committee possibly made the mistake in picking the busiest men in the business and our exhibit was not as bright as we would like to have had it. The writer was there on three evenings and it was a matter of general remark and astonishment to a great many that so many came to the Show at a time when the transportation facilities were such that it was next to impossible almost for them to get home the same night; in fact, most of us were doing snow shoveling around our homes in the spare time. The Show was a success. Credit is due the management, but particularly is credit due to the whole-souled women who gave us their time and talent so unstintingly for the most part, if not in all, without any compensation or hope of reward of any kind except that which must come to all patriotic citizens who do their full duty by the country in this troublesome time for which none on this side are responsible.

Chicago, Ill., January 19, 1918.

Miller & Hart (pork products).

Answering yours of the 17th, will say that we feel that the Patriotic Food Show was a great success. The writer was at the Show five different times during the week. We had two of our men at the Show constantly, and while the crowd was not anywhere near as large as it would have been had the weather been suitable, still there was a very good attendance and everyone showed a keen interest in what was being done in the way of education along economic lines.

We wish to congratulate you and all concerned on the successful carrying out of this undertaking.

WALTER H. MILLER, *President.*

Chicago, Ill., January 18, 1918.

Minneapolis Cereal Company, Inc. ("Cream of Rye").

We were not able to be at your Food Show, but we understand it was a success in every way.

As far as the advertising is concerned, we have not had time to get any results.

HARRISON THOMSON, *President.*

Minneapolis, Minn., January 21, 1918.

A. G. Morse Company, Inc.

We believe that the work of the Patriotic Food Show should be extended all over the United States. There is no question in our minds but what with proper education people can conserve and really live better.

Chicago, Ill., February 6, 1918.

Wm. J. Moxley (oleomargarine).

Your letter of the 17th in connection with the Show noted with considerable interest. It would seem obvious to the most casual observer that the consumers who attended were there for one sole purpose—to secure information.

We feel confident the results from their standpoint will prove of a very satisfactory character, and believe this Food Show to have been more successful from the educational standpoint than the usual food exposition.

C. A. BONNIWELL, *Director of Advertising.*

Chicago, Ill., January 24, 1918.

National Association of White Corn Millers.

I acknowledge receipt of your letter of January 18th and in reply beg to say that the Patriotic Food Show, recently held in Chicago, was one of the best exhibitions I have ever attended. From the members of our Association that had the privilege and the good fortune of attending your show, I have had nothing but praises, and I think it has done us lots of good.

CHAS. W. SCHMIDT, *Secretary*.

Cincinnati, Ohio, January 21, 1918.

National Dairy Council.

We have your favor of the 17th inst., making inquiry as to our opinion of the Patriotic Food Show.

We desire to unqualifiedly endorse the Show as one of the greatest measures that has been advanced in the entire country in the interest of developing action on what Uncle Sam is asking us to do in the way of food through his Food Administrator, and the State Council of Defense of Illinois is to be congratulated for setting the pace in a work which ought to be and will be emulated over the entire country.

W. E. SKINNER, *Secretary*.

Chicago, Ill., January 18, 1918.

National Poultry, Butter & Egg Association.

Replying to your letter of January 17th regarding Patriotic Food Show:

Our feeling is that considering the inclement weather the Food Show was very well received by the public.

Beyond this it is difficult to make any statement, for we have no means of knowing what the result will be, and time alone can determine that.

W. T. SEIPELS, *Business Manager*.

Chicago, Ill., January 19, 1918.

Novelty Candy Company.

Replying to your letter of the 17th, would say that we are not satisfied with the Show as far as our product is concerned.

We had sixteen jars of attractive candies that contained 50 per cent and more of corn syrup and were so labeled, and although quite a number of people asked how this candy was made, we were not allowed to give out any samples, and therefore those who inquired did not know the quality.

We can, as yet, see no reason why you did not allow samples to be given.

BEN. SCHNEEWIND, *President*.

Chicago, Ill., January 24, 1918.

Oelerich & Berry Company (molasses).

Answering yours of the 17th relative to recent Patriotic Food Show, we may truthfully say that from our former experience with other exhibits of this kind that this one excelled them all.

In the first place, the people seemed really interested in what they saw and heard in regard to the various methods used in preparing foods in such a way as to conserve certain other foods; this enthusiasm from a patriotic standpoint, and not merely for collecting samples. From the different questions asked at our booth, we can really see that our patrons meant business.

Therefore, briefly summing up, we will say that the Show from a manufacturer's viewpoint was a real success, and as an American citizen will say, that the public have finally realized that we are in this great war to win, and in order to do this we must learn to economize, first of all in the kitchen.

Thanking you and wishing you success in any future undertakings.

F. J. OELERICH, *Vice President*.

Chicago, Ill., January 17, 1918.

Penick & Ford, Ltd. (molasses).

In reply to your favor of the 18th, would say that we had a booth at the Patriotic Food Show recently held in Chicago, and that the reports that we obtained were very satisfactory. In fact, our Chicago representatives were very enthusiastic over the benefits we received by having a display of our goods at that Show, and while I understand the weather was very bad at that time, yet the attendance was good and we were so well satisfied that we would not hesitate to go into a similar show in some of the other cities.

C. L. NEILSON, *Gen. Mgr. of Sales*.

New Orleans, La., February 1, 1918.

Pillsbury Flour Mills Company.

We were very much pleased at the way in which the recent Patriotic Food Show in Chicago was worked out.

GEORGE P. CHAPMAN.

Minneapolis, Minn., January 22, 1918.

Charles C. Robbins, Inc. (fish dealer).

Replying to your letter with reference to the Food Show. We feel entirely satisfied with the demonstration presented at this Show and with the undoubted good which would have

resulted to many people but for the bad weather. There is no question in our mind about the success of the Show from the standpoint of the objects for which it was given. Of course, the actual results achieved were much restricted by the weather.

Chicago, Ill., January 18, 1918.

The A. I. Root Company (honey).

Aside from its commercial value the Show was a wonderful success, fully confirmed by the enthusiastic interest and desire for information regarding the food products exhibited, by the people in attendance. There is no comparison with other exhibitions for this was conducted on entirely different lines that could hardly be improved upon to meet the conditions existing today and help solve the food problem confronting the American people.

J. A. WARREN, *Asst. Sales Manager*.

Medina, Ohio, January 21, 1918.

Rothschild & Company (department store).

In answer to your letter of the 18th inst. in which you ask our opinion of the Patriotic Food Show recently conducted by the State Council of Defense, from our point of view it was a wonderful success both from a patriotic and educational standpoint; however, was somewhat disappointed in the attendance.

It is our opinion if this had been advertised in a more comprehensive manner, the attendance would have been vastly greater.

E. M. ROSENTHAL.

Chicago, Ill., January 19, 1918.

Royal Baking Powder Company.

Replying to your favor of the 17th instant, from a patriotic standpoint we believe the Food Show was very successful.

We consider work of this character essential in educating the public to conserve wheat flour and other food products, as urged by the Administration, and we are quite sure those attending this Food Show appreciated the efforts of this Company and the other manufacturers who participated in their endeavors to enlighten them on this subject.

New York, N. Y., January 23, 1918.

Russell-Miller Milling Company.

In reply to your inquiry of the 17th, sorry that we cannot give you a more definite or satisfactory answer owing to the fact that while our firm was represented at the Food Show, we had no one in attendance.

Our display was handled through mail instructions to the decorators and consequently it will be quite out of place for us to offer our ideas along the lines which you suggest.

We feel, however, that any "mobilization" of the country's industries for the promotion and development of "The Cause" should prove of pre-eminent benefit to all concerned.

H. R. WOOD, *Gen. Sales Department*.

Minneapolis, Minn., January 19, 1918.

Schulze Baking Company.

We are in receipt of your communication of the 12th inst. We gladly comply with your request for our views upon the general subject of the recent Food Show.

No doubt the influences in force during the exposition were generally beneficial, but in our opinion, particularly beneficial, because it started the visitors, many of them, to thinking upon an important subject.

We find ourselves with the impression that there was too great a gap between the methods used by the professional demonstrators, and the practical side of the question in reach of the ordinary housewife and which is acceptable to them.

We saw many instances of extravagance in the demonstration work. Such extravagances, in fact, as would put the large and moderately equipped baker out of business. But, after all, such conditions are general, whether in a Food Show, or in the home kitchen, where actual costs are not of paramount importance.

We were pleased to be a part of your exhibition, for we are always glad to meet those who have been encouraged to believe that home-made bread is better and more economical than our bread (we say ours to be specific), and demonstrate to them the fact that real, positive economy and true conservation is in giving up the false notion of "home baking being cheaper," and buy such bread as we are providing.

We are not holding any brief for our particular business or products; we are just trying to bring out a few facts that are clearly seen by those who desire to be reasonable and practical in their conclusions.

We would say that your exhibition did its greatest good, and had its greatest success in causing the people to think and forsake the theoretical for the practical methods of food preparation and its use.

F. C. DAVIS, *Gen. Sales Manager*.

Chicago, Ill., January 18, 1918.

Sherer-Gillett Company (grocers' sanitary counters).

I am allowing my son to reply to your request of the 17th and am giving you the reply below:

"My opinion as to the value of the Show based on my own observation of the various exhibits as well as on the remarks made by visitors at our booth, is that the Show had a tremendous educational value.

People came with an open mind, seeking knowledge, as evidenced by the expressions oft repeated, 'That's what we are here for, to get ideas,' 'I certainly have learned something,' 'I never realized that before,' etc.

There were too many exhibits where the only and obvious object of the display was to book the sale of certain brands of foods. This probably is inevitable in a Show of this magnitude.

The American Can Co. booth seemed to be working somewhat along the lines of the Order promulgated by the Canadian Food Controller, namely, to popularize *large* packages.

I believe that if the department of the Government which is boosting the sale of Thrift Stamps—War Savings Stamps were to have a section at other similar shows—the exhibitors to be selected with a view to eliminating all but those who could actually show a dollar and cents saving in the buying, preparation, and cooking of food, it would be a fine thing for the people and for the Government."

My own impression is that the educational features of the Show were valuable, not all equally so by any means, and we think that some sifting should be done in regard to those who are permitted to exhibit. It occurs to the writer that there might be a modification of the Show making it more of a thrift show, and let methods of economizing in whatever way be demonstrated at this show. This would naturally include the suggestion which my son makes in regard to the campaign for the sale of thrift stamps. One reason for suggesting this is that the community has been fed on food shows until it is satiated. Let economies in foods be demonstrated as well as other economies that can be made.

W. G. SHERER.

Chicago, Ill., January 21, 1918.

Thomas S. Smith (apples).

We are writing to express the satisfaction which we feel in the conduct of the recent Patriotic Food Show held at the Coliseum. We are very glad to have taken part in it and are well satisfied with the results.

From an educational point of view, we believe the Show has been a great success and has been exceedingly helpful to the people of Chicago in these war times.

Those who are responsible for the idea and its carrying out are to be greatly commended.

Chicago, Ill., January 24, 1918.

The Southern Cotton Oil Company.

Referring to the recent Patriotic Food Show conducted by your Council recently at the Coliseum in Chicago, in which we had our exhibit of Wesson Oil (for cooking and salads), I wish to say that we consider the exhibit was a splendid success and we are very glad indeed that we participated.

E. W. APPLEGATE, *District Manager.*

Chicago, Ill., February 8, 1918.

Sprague, Warner & Company (wholesale grocers).

Replying to your inquiry of recent date in reference to our opinion of the Patriotic Food Show will say we do not feel that we are in a position to pass judgment upon the results accomplished.

It goes without saying that we were in hearty sympathy with the ideas underlying the undertaking, and are convinced that the Show presented opportunities for gaining much valuable information, but as to the extent to which visitors took advantage of them we can only conjecture. Doubtless those who were sufficiently interested to seek practical information were well repaid and will profit by the lessons taught.

It is a matter of regret to us that exhibitors, as a rule, did not conduct their part of the Show with a clearly defined intent to further the interest of the educational features rather than their own.

C. R. GROVER, *Manager Printing Dept.*

Chicago, Ill., January 24, 1918.

Standard Oil Company ("Parawax").

Replying to your letter of January 17th requesting some expression from us as to the value and success of the Patriotic Food Show recently held in the Coliseum.

As we understood it, the primary object of this Show was educational, and, judging from the large attendance, notwithstanding the unusual weather conditions, and the keen interest that the public seemed to take at the demonstration booths

and exhibits, we are quite sure that the Show accomplished the mission for which it was intended.

We consider that the lectures and addresses given at various times in the lecture room were very interesting features of the Show.

As a whole, the Show was a success.

E. J. BULLOCK, *Manager.*

Chicago, Ill., January 26, 1918.

Steele-Wedeles Company (wholesale grocers).

We have your favor of the 17th inst. In reply, beg to state that in our opinion this was one of the best conducted food shows ever held in this city.

From a patriotic standpoint, we think it was highly commendable and the attendance was exceptionally good, considering the bad weather and poor transportation facilities which unfortunately, could not be helped.

From a business standpoint, we think that it would have helped the manufacturers and jobbers and also the cause, if we had been permitted to take orders to be filled through retail grocers. By doing so, we would have aided the Food Administration in carrying out their plans.

Many people who visit a show of this kind become very enthusiastic about supporting the Administration, and then go home and forget all about it. If an opportunity is offered them to purchase certain foods which the Administration would like to have them use, it would give the loyal manufacturer and jobber a chance to push these products and get the consumer in the habit of using them in their own kitchen.

OSCAR J. VOGL, *Mgr. Sales Promotion Dept.*

Chicago, Ill., January 22, 1918.

Syme, Eagle & Company (dehydrated foods).

In reference to your letter of January 17th, the writer was very much impressed at the Patriotic Food Show with the apparent desire of all the visitors to become educated in the use of economical foods, and as far as our own exhibit went, we were more than pleased with the results and the interest shown by the visitors. The Show impressed us as a splendid proposition, and we trust that there will be a repetition either next year or before if it is necessary.

M. R. THOMPSON.

Chicago, Ill., January 18, 1918.

United Cereal Mills, Ltd.

I want you to know the satisfaction which we had in the outcome of our exhibit at the Food Show which was held at the Coliseum. We deem it a very great privilege to have been represented in this way.

We have received very large results in an educational way on our products, "Fruited Wheat" and "Fruited Oats." We had something over a hundred names handed to us by people who were interested in the improved method of serving the balanced food. The Show as a whole was, in our opinion, of a very high order. We were so well pleased with the results that we are entering the Food Show at St. Louis which is to be held on the 2nd of February, and also the one at Cleveland, Ohio, to be held on the 4th of February.

I also want to thank you for the many courtesies shown us in connection with our exhibit at the Show.

G. B. RAYMOND, *Sales Manager.*

Chicago, Ill., January 23, 1918.

U. S. Slicing Machine Company.

It is our duty and pleasure to congratulate the State Council of Defense for the successful conduct of the Patriotic Food Show which has just recently been terminated in Chicago.

As manufacturers of a product which has its chief value in the conservation of food through elimination of waste, we were very much interested in the Show and highly gratified to observe the beneficial results obtained.

In spite of the fact that unprecedented weather reduced the attendance to a very low figure, the value of the Show to the community and to the country at large cannot be fully estimated.

N. R. RONDTHALER, *Sales Department.*

La Porte, Ind., January 19, 1918.

F. A. Vickers & Company (for the pickle packers of Chicago).

Replying to your favor of January 18th regarding the Patriotic Food Show, would state that we think, as a whole, the Show conducted by the State Council of Defense was a success.

Unfortunately, the writer was called out of town on business and was away practically all the week that this was held.

I, however, have this suggestion to make regarding future exhibitions. Where the space is taken as a co-operative proposition and where no effort is made for advertising any

particular pack that samples should be given out simply advertising the industry without advertising any particular firm so as to bring home to the people who attend the industry taking space.

The writer does appreciate the fact that it would be practically impossible to get enough industries to take all of the space necessary to finance a proposition of this kind and we further appreciate the fact that you cannot grant privileges to one set without allowing the individual manufacturer who is also contributing to the expense the same privileges.

We believe that the proposition as a whole is a good one, but some of our contributors to the pickle packers' display made the above criticism which I am in turn passing on to you.

Further criticism which I heard is the fact that there was no adequate protection taken to take care of the goods exhibited at the close of the exhibition. The writer, being snow-bound on his way from the East, could not be here, and all samples, representing possibly seventy-five to one hundred dollars in value, were appropriated late Sunday night at the close of the exhibition, which should have been returned to the exhibitors.

Believe future shows should have arrangements made to take care of the property of the exhibitors until same could be removed the day after the exhibition closes.

Chicago, Ill., January 19, 1918.

The Vilter Manufacturing Company (refrigeration apparatus).

Your favor of January 17th received and are pleased to state that we welcome the opportunity afforded us in being one of the exhibitors at the Patriotic Food Show, Chicago, Ill., recently conducted by the State Council of Defense of Illinois.

The State Council of Defense and the Patriotic Food Show Committee deserve great credit for the success and management of this Show, which was the first of its kind in this country.

The Show impressed us as one most worthy to the cause of food conservation, highly educational and beneficial to all who saw it.

THO. O. VILTER.

Milwaukee, Wis., January 18, 1918.

W. M. Walker (fish dealer).

Replying to your letter of January 17th, in our opinion the Patriotic Food Show was a success in every way. We were particularly impressed with the interest shown by the visitors and believe the educational benefits were great. We were glad of the opportunity offered us to do our bit and feel sure, had it not been for the severe blizzards and extreme cold, the attendance would have broken all exhibition records.

Chicago, Ill., January 19, 1918.

Waukesha Pure Food Company ("Jiffy-Jell" gelatine).

Replying to your inquiry of the 17th, would advise that we were very much pleased at the manner in which the Chicago Patriotic Food Show was conducted. Only favorable comments were heard from all those with whom we talked.

There is no doubt but what much good was accomplished from an educational standpoint and that this, the first Show of the kind, will set a high standard for other cities and communities to follow.

The consuming public is becoming more discriminating than ever in the purchase of all articles of food. They now realize that, broadly speaking, the quality is remembered long after the price has been forgotten, consequently, those who visited the Coliseum during this stormy week did so with a definite purpose in mind and came away well satisfied with what they saw and learned.

American manufacturers are doing all they can to maintain the high standards and it is very gratifying to know that they are having the united support of the intelligent buying public.

O. E. GLIDDEN, *General Manager.*

Waukesha, Wis., January 22, 1918.

Economic Ratio of Bulk and Packaged Foods

	Dried peaches.	Canned peaches.	Dried beans.	Pork and beans.	Cracked wheat.	Corn meal.	Oat meal.	Rice.	Rolled oats.	Corn flakes.	Shredded wheat.	Puffed rice.
Price per package (cents).....	15.	30	20	20	4	3.5	3.0	14	10	10	15	15
Net weight claimed (grams).....	453.6	850.5	453.6	595.3	453	453	453	453	624	283	340	141
Net weight found (grams).....	456.5	867.4	455.6	590.5	453	453	453	453	602	332	354	177
Water (per cent).....	15.45	70.75	10.54	69.53	13.65	13.12	12.37	13.11	6.55	4.32	4.61	7.13
Ether extract (fat, per cent).....	1.52	trace	1.74	1.19	1.75	4.62	5.32	0.88	7.84	0.26	0.96	0.26
Fibre (per cent).....	0.51	0.65	4.39	0.11	2.53	2.49	11.19	0.63	1.17	0.46	2.61	0.30
Protein (per cent).....	4.73	0.47	16.97	6.61	12.35	9.85	10.41	7.85	15.81	7.87	13.5	8.25
Ash (per cent).....	3.19	0.29	4.46	1.66	1.81	1.51	3.2	1.01	1.70	1.38	1.72	0.31
Carbohydrates (per cent).....	74.6	28.41	61.99	20.90	67.91	68.41	67.78	66.52	66.93	85.71	77.6	83.7
Cost per pound (cents).....	15	16	20	15.4	4.0	3.5	3.0	14.0	7.2	13.6	19.2	38
Cost per 1,000 calories (cents)....	9.74	30	13	27.4	2.53	2.1	1.8	9.8	4.0	7.6	11.0	22.3
Food value in calories.....	1539	538	1540	562	1568	1650	1649	1420	1681	1751	1735	1740

The accompanying chart is most significant. It was prepared by Mariner & Hoskins, of Chicago, analytical chemists, for the Sherer-Gillett Company of Chicago, a firm which sells an excellent grocer's counter for use in dispensing bulk goods in sanitary fashion. The figures are those of several months ago.

Charts of an economic nature are by no means rare in these days of strife and it is well that it is so. Exact knowledge never hurt any one—in the long run. As long as statistical matter is conceived in honesty and born in accuracy, it, at all times, has the freedom of these columns.

Freely translated, these numbers tell us that on the basis of their calorie values, canned peaches cost three times as much as dried peaches. Canned peaches are delicious and convenient to use, and enjoy a well-deserved popularity. Probably they will continue to enjoy their present popularity, but it is well to know that the same fruit in dry form can be obtained for one-third the price.

Also, we learn that canned pork and beans costs about twice as much per unit of food value as do dried beans. The canned article, after a preliminary warming, is ready for use and is the standby of the housewife, and especially the young housewife, whose more formal efforts at dinner-making go wrong. To her they are probably worth twice the raw variety, but exact knowledge as to their price ratio should not be denied her.

Cracked wheat from bulk at 2.5 cents should be compared with shredded wheat at 11 cents; bulk cornmeal at 2.1 cents with corn flakes at 7.6 cents; bulk oatmeal at 1.8 cents with rolled oats at 4 cents; bulk rice at 9.8 cents with puffed rice at 22.3 cents. The prepared cereals are deservedly popular, but they are *not* cheap. Part of the price differential is due to the pre-cooking in the factory, part to the packaging and methods of selling.

News from Washington

More Food Industries Licensed.

Amendments and additions to the regulations governing the importation, storage and distribution of food commodities and feeding stuffs have been issued in pamphlet form by the United States Food Administration. These new rulings apply to all licensees except salt water fishermen whose business does not extend beyond primary consignment, and millers of wheat and rye with plants having a daily capacity of less than seventy-five barrels. The amendments and additions given in this compilation became effective January 28 except those governing manufacturers and distributors of feeding stuffs, which will be in force February 15.

Profiteering through unnecessary transactions is eliminated by the rule which forbids the resale of food commodities within the same trade, without reasonable justification. It is clear that the particular lot of goods whose resale is proposed will go through to the retailer at a lower price if the wholesaler who now owns them sells direct to the retailer instead of to another wholesaler, who would add a second wholesale profit on the same lot of goods.

The rules include specific regulations governing the acceptance and unloading of perishables. This will avoid an undue accumulation of perishable shipments at terminal points, tying up transportation, and will reduce the possibilities of waste to a minimum. The rules recommend the parties to make definite contracts so as to avoid disputes, and define clearly the right of shipper and receiver.

The rules concerning fresh fruits and vegetables were prepared after a conference with shippers and receivers of perishable food commodities, and have been based on recommendations from them, in order to meet conditions which have resulted in great waste of these products throughout the country. These rules also apply to dried peas and beans.

The new rules provide that live poultry containing in their craws more than one ounce of feed for each two pounds in weight, or dressed poultry containing more than one-fifth ounce of feed for each two pounds in weight, shall not be offered for sale. They also provide that poultry feed must not contain any wheat fit for human consumption, and in no event shall the amount of wheat exceed ten per cent.

Fresh meat and fresh meat products, fresh or frozen fish, eggs and butter held in cold storage for a period of thirty days or more must be marked "cold storage" and sold as such. Licensees are not permitted to remove "cold storage" stamps from such marked foods or their containers.

All manufacturers of lard substitutes are brought under license, with regulations which prohibit speculation and hoarding, at the same time shortening the channels of trade and eliminating unnecessary distributing expenses.

No edible oils used in manufacturing may be kept on hand or held under contract in excess of reasonable requirements for a reasonable length of time. This of course makes allowances for amounts which must be carried in seasons of scant or no production. The licensee will not be allowed to have in his possession any lard substitute not of his own manufacture.

No manufacturer will be permitted to carry any lard substitute in stock for more than thirty days. At no time can he make contracts for the sale of his products in greater quantities than he can manufacture in that period; nor can he contract for shipment or delivery more than thirty days after contract is made, unless it is with a nation at war with Germany or with federal, state, county or municipal governments.

The new regulations cover all importers, crushers, refiners and dealers in copra, copra oil, cocoanut oil, palm kernels, palm kernel oil, palm oil, imported peanuts and the oil from imported peanuts, and imported soya beans and their oil. Only with the written consent of the United States Food Administrator may a licensee have any of these materials on hand for more than 60 days after they reach the United States. He will not be allowed at any time to make contracts for the sale of any of these commodities or their products except against his actual purchases at the time. In order to check on this, the Food Administration requires from every importer a copy of all contracts, to be mailed to Washington within three days after they are made.

No licensee will be allowed to sell to any person, firm or association not regularly engaged in the distribution or use of these commodities, nor will resales within the trade be permitted. No crusher will be allowed to have under his control at any time raw materials in quantities above his normal crushing capacity for a period of six months, nor more of the oils than the equivalent of his production for two months. All refiners are required to adjust their processes to produce the largest practicable yield of edible oil, and are prohibited from having under control more oil than would meet their reasonable requirements for a reasonable length of time.

Unless permitted by the U. S. Food Administrator no licensee can sell wheat or rye, except mill feed, for feeding purposes or use wheat or rye in manufacturing or mixing feeds. There is an exception to this, however; poultry or pigeon feed may contain not more than ten per cent of wheat or rye unfit for human consumption.

In any sale of feedingstuffs the licensee must not take more than a reasonable profit over the average cost of his stock of any commodity on hand or under control, not at that time contracted to be sold. In arriving at the cost of corn or oats he must take into consideration the gain or loss resulting from any hedging transaction on a grain exchange.

The pamphlet is intended as a supplement to the rules and regulations issued in November and has been mailed to licensees. One feature of considerable value is the interpretations and rulings which follow the amendments and additions.

Cheese in Cold Storage.

The Food Administration will permit dealers in cheese to carry cheese in cold storage through the periods of scant or no production. No cheese may be kept in storage after the next production season opens. Only in special cases will permission be given to carry cheese beyond the heavy production season. This can be done only with the written consent of the Food Administration, to be given only if peculiar circumstances require special action in individual cases.

Rules for Licensed Manufacturers of Alimentary Paste or Breakfast Cereals.

Rule 1. No licensee shall during any one of the months of February, March, April, May, June or July, 1918, use in the manufacture of alimentary paste or breakfast cereals an amount of wheat or any products of wheat (other than bran, shorts, or middlings) in excess of one-sixth of 70 per cent of the amount thereof used by him between February 1, 1917, and July 31, 1917; provided, that if the licensee shall so elect and give written notice of his election to the U. S. Food Administrator before February 15, 1918, he shall not be subject to the foregoing limitation, but to the following limitation: he shall not during the months of February, March, April, May, June and July, 1918, use in the manufacture of alimentary paste or breakfast cereals an amount of wheat or any products of wheat other than bran, shorts, or middlings, in excess of 70 per cent of the amount thereof that he used in the corresponding month of the year 1917.

License Regulations Extended.

On January 31 the President extended the license regulations as applied to bakers to take in hotels, restaurants, clubs and all manufacturers of bread in any form, cake, crackers, biscuits, pastry and all other bakery products who use over 3 barrels of flour. All licenses must be obtained by February 4.

The President's proclamation also orders that persons, firms, corporations and associations engaged in importing or distributing green coffee must procure license on or before February 4. All applications for license are to be made to the United States Food Administration. Violations are punishable by a penalty prescribed by Congress in the food conservation act.

Under existing regulations, all bakers, clubs, hotels, etc., using 10 barrels of flour or more a month are licensed. The new proclamation extends the Food Administration's control to take in thousands of small establishments heretofore unregulated.

Wheat Conservation Rules.

Special Rules 23 to 32 have been promulgated to assure an adequate supply and equitable distribution of wheat flour.

Rule 23 forbids sale or use of "Second Clear" or "Low Grade" flour for any purpose except manufacture of human food.

Rules 24 and 25 apply to millers and forbid: the sale of more than 70 per cent of its normal supply of wheat flour to any town, city, state or district up to July 31, 1918; any enlargement of business; the sale of wheat flour, except whole wheat flour, to bakers, retailers or consumers, except with one pound of substitutes to every four pounds of wheat flour. Substitutes are listed (already given elsewhere in this JOURNAL), and more than pre-war profits are forbidden.

Rules 27 to 30 apply the same regulations to wholesalers and jobbers, adding the restriction of sales to retailers or consumers to one pound of wheat flour substitutes for every pound of wheat flour.

Rules 31 and 32 apply to retailers, restricting sales to one pound of substitutes for every pound of wheat flour, and requiring equitable distribution: to individuals in towns or cities not more than $\frac{1}{8}$ to $\frac{1}{4}$ barrels, and to consumers in rural or farm communities not in excess of $\frac{1}{4}$ to $\frac{1}{2}$ barrels.

Regulations for Licensees Manufacturing Bakery Products.

Detailed regulations have been issued defining the minimum percentage of wheat flour substitutes to be used to entitle bakers to apply the name "Victory" to their products. These are as follows:

	Per Cent
Class 1—Bread and rolls.....	20
Class 2—Sweet yeast dough goods.....	33 $\frac{1}{3}$
Class 3—(a) crackers; (b) biscuits (cookies) and ice cream cones.....	33 $\frac{1}{3}$
Class 4—(a) cakes; (b) pies; (c) fried cakes; (d) pastry	33 $\frac{1}{3}$
Class 5—Batter cakes and waffles.....	75

Special Rule A for manufacturers of Classes 2, 3, 4 and 5 limits their use of wheat or its products other than bran, shorts or middlings, during any month from February to July, to one-sixth of 10 per cent of the amount used between February 1, 1917, and July 31, 1917, or, during all six months, to 70 per cent of the amount used in the same period of 1917.

Each class is taken up in turn, defined, and given special rulings. The chief points are as follows:

Class 1: After February 3, 5 pounds substitutes to 95 pounds wheat; by February 24, 20 pounds substitutes to 80 pounds wheat. Until March 3 rye flour may be used as a substitute; graham or whole wheat flour (20 per cent or more of bran, shorts or middlings) allowed; 4 pounds of potatoes equivalent to 1 pound other substitutes. Only weights permitted (net weight in pounds, 12 hours after baking): 1, 1 $\frac{1}{2}$, 2, 3, 4, 5, 6 and other pound weights. Portions of loaves may be sold and at any time after baking. Rolls must weigh 2 ounces. Sugar for bread or rolls not to exceed 6 pounds cane or beet, or 7 pounds corn, or 7 pounds invert to 196 pounds flour or meal. None but vegetable shortening allowed and only 2 pounds to 196 pounds flour or meal. Milk not limited.

Class 2: Special Rule A applies. Only vegetable shortening allowed.

Class 3: Special Rule A applies. Not over 50 per cent shortening may be animal fat.

Class 4: Special Rule A applies. Only vegetable shortening allowed in pies and fried cakes.

Class 5: Special Rule A applies. Only vegetable shortening allowed.

Raising Price of Wheat Flour Substitutes.

Warning against unwarranted increase in the price of wheat flour substitutes has been issued by the Food Administration. This action followed the receipt of numerous complaints that dealers in the various ingredients used in place of wheat flour are taking advantage of the new wheat conservation program to raise prices.

Mills of the country are prepared to meet the greater demand of housewives and bakers for other cereals during the next few months. Lack of transportation is the only factor that will stand in the way of proper distribution throughout the country.

At least one of the substitutes is produced in quantity in almost every section of the country. If any shortages occur they will be local and not due so much to lack of supplies as difficulty in transporting them. The supply of substitutes is ample to meet our needs and it is confidently expected that with the freer movement of grains to the mills and of the finished product to the consumer lower prices than those now prevailing will result.

The normal tendency of local scarcities would be to advance prices out of line with cost of production and distribution. Under the food control act this will not happen. All licensees dealing in food commodities who do not give their customers the benefit of fair and moderate prices, selling at no more than a reasonable profit above cost, will have their licenses revoked. Unlicensed food retailers who sell at more than a reasonable profit will have their supplies cut off through the notification of all licensees by the Food Administration forbidding them to receive orders for food from such retailers.

Additional Tin Plate for Bean Packers.

The U. S. Food Administration has announced that it has secured the release of sufficient tin plate to permit canners to begin operations on an additional 25 per cent of their indicated pack of dry white, colored or lima beans. They had already been granted permits to can an initial 25 per cent of the amounts they had indicated would be packed by March 1.

In addition to amounts canned under permits for dried beans, the Food Administration is urging canners to pack the greatest possible quantity of wet beans. Beans containing more than 20 per cent of moisture are included in this class. Unless they are canned before warm weather they will be lost. Special permits must be secured for the wet beans. The Food Administration will grant these as freely as possible. The pig tin situation is still serious. With part of it utilized to save wet beans now in storage, there is some question as to when the Food Administration will be able to secure an additional release of tin plate. Every possible effort is being made, however, to insure a supply sufficient to prevent the spoilage of the wet bean crop.

Late summer rains and early frost partly explain the large proportion of wet beans resulting from last summer's crops. In food value they are equal to the dried beans, and the Food Administration will endeavor to have the entire crop made available in the form of canned goods. In a letter sent to all canners, the Food Administration says: "As a patriotic food conservation measure we suggest that you can the maximum quantity possible of this wet stock."

California Sugar Beet Commission.

The United States Food Administration has appointed P. F. Cogswell of El Monte, Judge Merle J. Rogers of Ventura, and John Perry of Stockton, Cal., as a commission to determine the cost of producing sugar beets in California and a fair profit thereon. The Commission will be organized at once by Ralph Merritt, Federal Food Administrator for California, who early in the season suggested that the cost of beet production be determined in this manner.

The Commission will be authorized to hold public hearings, take the testimony of the producers who may voluntarily appear before it, and the testimony of producers who may be called by it, after which it will make a finding.

The Commission's power does not extend to fixing a price which shall be paid the producers by the refiners, but is limited to the determination of the cost of beet production and a fair profit thereon. There has been an active discussion regarding the cost of producing sugar beets in California, and the sugar beet producers joined with Mr. Merritt in requesting an inquiry.

U. S. Food Administration Commission.

Bringing first hand information about the European food situation, the United States Food Administration's Commission to France arrived in New York the last week of January and started on a speaking tour of the country.

Sent to Europe to ascertain actual food conditions, the Commission has been telling American audiences the pressing need for providing food for the nations associated with America in the prosecution of the war.

In the Commission are: Roscoe Mitchell, attorney, of Buffalo, N. Y.; Edward F. Trefz, publicist, of Chicago; Everett Colby, attorney, of New Jersey; Rev. Julius Lincoln, of Jamestown, N. Y.; Daniel Reed, of Flint, Mich.; and John B. Lord of New York.

Two members, at the invitation of the King of Italy, visited that country, securing an accurate resume of food conditions among the civilian population and along the battle lines.

The Commission arrived in England December 4. What they saw and learned is indicated in letters they wrote home. From the day of their landing, their time was fully occupied in tours of inspection, conferences and personal contact with the soldiers and civilians of the Allied countries. Of their first day's experience, John B. Lord wrote:

"We were officially met at the dock and received instructions to proceed out into the country to inspect one of the training camps where women get intensive farm training in eight weeks. The girls come from any walk in life and from any occupation—sign on as a soldier enlists—learn to do dairying, plowing (with sturdy little tractors), seeding, planting, and, in fact, everything about a farm by practical experience. After such a training they go by order to any part of the country to any farm where a man can be released for military duty. We have read of the women of France; the women of England are just as remarkable and their spirit to aid the country is just as superb."

Hurrying on to London, for the purpose of conferring with Lord Rhondda, British food controller, and inspecting the municipal kitchen queues, the Commission went through an air raid.

"What we saw was not warfare—just plain murder; direct attempts made on lives of innocent non-combatants," on member commented.

Not only did the Commission find out how the English civilian population lives, but the members made a special trip to a German-Austrian detention camp, where large numbers of German civilians, in England when war was declared, are interned. Here the housing and plan of feeding was inspected.

These side trips were unusually valuable in showing just how the Allied civilian population is living—what food control means to the English family, and what foods are obtainable.

In France the Commission spent four days visiting the British front and the same length of time with the French forces. For five days the Commission had quarters and mess with the American expeditionary forces, billeted with the troopers.

France's ability to produce food crops was carefully investigated. By motor the entire party toured the agricultural regions far behind the lines, visiting country that has been neglected by virtually all writers going abroad eager to see the military operations rather than the equally important armies of workers in the farming lands.

E. PRITCHARD

Packer and Manufacturer
of the Finest

"EDDYS" BRAND

Canned Foods,
Jellies, Preserves,
Plum Pudding,
Sauces, Table Delicacies,
and

PRIDE OF THE FARM Tomato Catsup

Bridgeton, N. J.
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Rumford

THE WHOLESOME
BAKING POWDER

Worthy of the highest commendation as a healthful, efficient and economical leavening agent.

The acid ingredient in Rumford is the genuine Prof. Horsford's phosphate in its improved form. It restores phosphatic elements equivalent to those which fine wheat flour loses in the milling.

A Perfect Baking Powder.

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Our Answer to Lord Rhondda.

The following statement has been given out by the United States Food Administration:

The food situation in Europe has become steadily more difficult, and larger demands have now been made upon us than ever before.

On January 1 we had already exported the 60,000,000 bushels of wheat which comprised our normal surplus from the last harvest. The latest cable from Lord Rhondda, who speaks on behalf of the wheat control of the French, English and Italian Governments, needs no added word from me.

Unless you are able to send the Allies at least 75,000,000 bushels of wheat over and above what you have exported up to January 1, and in addition to the total exportable surplus from Canada, I can not take the responsibility of assuring our people that there will be food enough to win the war. Imperative necessity compels me to cable you in this blunt way. No one knows better than I that the American people, regardless of national and individual sacrifice, have so far refused nothing that is needed for the war, but it now lies with America to decide whether or not the Allies in Europe shall have enough bread to hold out until the United States is able to throw its force into the field. I have not minced words because I am convinced that the American people, if they know the truth, will not hesitate to meet the emergency.

We have replied: "We will export every grain that the American people save from their normal consumption. We believe our people will not fail to meet the emergency."

In addition to this amount for the Allies, we must find 15,000,000 bushels for the Belgian relief, or these people whom we have supported all these three years will starve; and we must also furnish some 10,000,000 bushels for Cuba and other neutrals upon whom we are dependent for other foods in return. We estimate the American people have saved as much as 30,000,000 bushels out of last harvest, and if we are to meet the increased demands we must rigidly reduce our wheat consumption to 30 per cent below normal until next harvest.

In addition to wheat, we are shipping large quantities of corn and other cereals to mix in their bread, but Europe must have a wheat foundation for the loaf just as we must.

* * * * *

It would be easier for us to ask less than necessity demands. What we do ask are not large percentages—there is no privation in them. In any event, we have no intention of exporting more than our savings, for we must and will protect the food supply of our own people. Therefore, the fullness with which we can meet these demands is determined simply by our monthly saving. We have abundant other foods which we can substitute for the exports wanted and if we could only eliminate all waste and all unnecessary consumption it would solve the problem. A large number of our people are not in a position to reduce consumption. Their daily life is of necessity one of continuous economy and saving. The responsibility and the burden of these savings must, therefore, fall in a large degree upon those more fortunately situated. Those who have most must save most.

Schulze Baking Co. Does Its Bit.

A striking illustration of the patriotic co-operation of business men with the Food Administration is found in the selection of the name "Victory Bread"

Armour's

The Big Name in Foods

THE Oval Label is Armour's *positive* guarantee of food purity and highest quality. It expresses the high standards attained by our care in selection, skill in preparation and the experience gained during 50 years of quality food production.

Armour's Oval Label appears on a big variety of Package Foods, including Meats, Fish, Fruits, Vegetables, Condiments, Rice, Evaporated Milk, etc.



ARMOUR AND COMPANY
CHICAGO

2188

to characterize all bread containing 80 per cent or less wheat flour.

After this name had been decided upon by the Food Administration, it was learned that the same word had just been registered by the Schulze Advertising Service, which is affiliated with the Schulze Baking Company, of Chicago. The Schulze Company had already prepared an advertising campaign on Victory Bread and had opened negotiations with many bakers throughout the country to make use of the name in connection with the Schulze Service.

The Food Administration telegraphed to the Chicago firm explaining the situation and Mr. Paul Schulze of the Schulze Company promptly wired this brief but significant reply: "Victory is yours."

A letter immediately followed stating that the Schulze Advertising Service would gladly assign to the Government all rights to the name "Victory Bread," permitting the Food Administration to use the words in any manner, with no strings attached by the Schulze Company.

William Evans, manager of the Schulze Advertising Service, also offered his personal assistance in working out the plan, utilizing his experience of many years in promoting advertising campaigns to bakers.

Food Administration Notice.—To All Exchanges and Associations of Dealers in and Distributors of Butter, Cheese, Eggs and Poultry:

We desire to advise you that a number of concerns subject to license under the President's proclamation of October 8, 1917, through misunderstanding or neglect, have failed to apply for the necessary license

and are thereby conducting their business illegally. We are also informed that Rule 22, which reads as follows, is being disregarded:

Rule 22.—"The licensee shall place on every contract, order, acceptance of order, invoice, price list and quotation issued or signed by him relating to food commodities the words United States Food Administration License Number followed by the number of his license. No licensee shall knowingly buy any food commodities from or sell any such commodities to, or handle any such commodities for, any person required to have a license who has not secured such license and complied with the provision of this rule."

We therefore ask your patriotic co-operation in bringing this matter before the members handling the various commodities you trade in, and further ask you to send to the United States Food Administration a list of your members and other dealers who are subject to license—this to enable us to complete our records and to know if there are any firms or individuals who have not as yet filed applications for licenses.

Copy of "Rules and Regulations Governing the Importation, Manufacture, Storage and Distribution of Food Commodities for Domestic Trade by Persons Subject to License" is enclosed herewith. This notice relates to concerns importing, manufacturing or distributing butter, cheese, poultry or eggs, excepting retailers whose gross sales of food commodities do not exceed \$100,000 per annum.

We assure you of our appreciation of your co-operation along all lines.

UNITED STATES FOOD ADMINISTRATION.
By Frank A. Horne, Chairman Special Committee on Licenses, Department Marketing and Distribution of Perishables.

Acid Calcium Phosphate
 Acid Ammonium Phosphate
 Liquid Acid Phosphate
 Baking Powder Materials
 Phosphoric Acid
 Epsom Salts U. S. P.
 Oxalic Acid

Correspondence solicited

VICTOR CHEMICAL WORKS

New York

CHICAGO

St. Louis

Largest Manufacturers

Meals Served Ship Crews Planned to Conserve Food.

Crews of steamers flying the American flag on the Atlantic and the Gulf of Mexico will soon be lined up in the food-conservation army. The U. S. Food Administration, co-operating with the Department of Commerce and the Shipping Board, has prepared universal menus effective February 1, for steamships sailing from ports on the eastern coast. A program for the Pacific steamers will be announced later.

The suggested menus mark a radical revision in the usual fore-castle diet. "Bully beef and spuds" is no longer the mainstay, and even salt pork, which has long been the principal article of a seaman's diet, is shoved into the background. In their places have been substituted food which will provide a much wider variety than has been the rule aboard ship, at the same time conforming to plans which have been mapped out for saving the greatest possible quantity of beef, pork, sugar, and fats for export to Europe.

The Food Administration believes that the new menus will meet with instant approval from the men and that they will afford the owners an opportunity to support the Food Administration, as well as to assure a well-balanced menu for their workers.

Among other conservation measures, the program calls for 10 wheatless meals each week, substituting corn, rye and other breads for white-flour bread.

The crews will not be the only sea-going folk to observe the wheatless and meatless days. The Food Administration has issued to passenger steamship companies a request to observe the recommendations of the Food Administration at every meal. This is already being done by some of the well-known lines.

New Yorkers Ask for Ration.

Hundreds of households of wealthy New York families will soon be placed on voluntary "war rations," mapped out by the U. S. Food Administration at the request of more than 300 of the leading women of that city. At a recent meeting, addressed by F. C. Walcott of the Food Administration, the women asked to be told definitely what they should eat in order to help solve the present world food problem. Not only did they promise to place their own families on any ration that would be suggested by the Food Administration, but they offered to organize a movement for securing similar pledges from hundreds more well-to-do housewives. The Food Administration has completed the ration and the women will begin work immediately on "New York's honor system for food saving by voluntary rationing," endeavoring to secure additional signatures to a pledge promising observance of the new ration.

The Food Administration did not suggest the rationing system until it had received a definite suggestion from women who declared they were willing to make any sacrifice in their homes in order that the work of the Food Administration could reach the highest possible degree of efficiency and that the people across the sea could be assured of a constant supply of food.

"We haven't done enough for our country. We want to do more. Tell us what we can do to help, and we promise that your advice, no matter what sacrifice it may entail, will be followed to the letter," they promised in pleading for a plain statement—phrased in terms of actual consumption of various foodstuffs—of how the menus of well-to-do families should be curtailed in order that the Allies may be fed without undue privation in this country.

Some of the leaders of the movement, when shown the ration card, declared the program to be a stiff one, but added that the Food Administration could not ask too much of them if they felt that their sacrifices would help America and our war associates.



Is *this* the weak link in the chain? Or... does it cost too much?

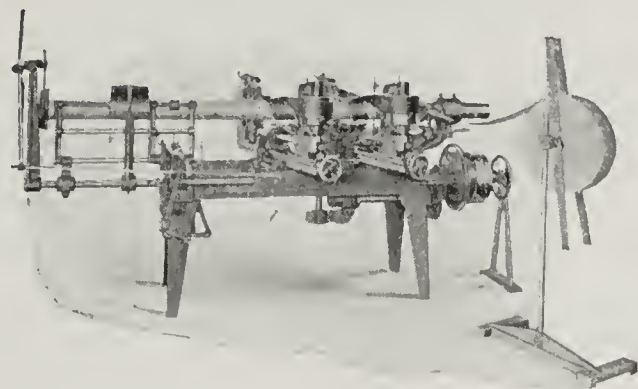
Are you satisfied with the container that carries your product? Or, does it cost too much?

SAVE WITH PAPER

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CAMDEN, N. J., U. S. A.

CANADIAN FAIRBANKS-MORSE CO., Agents for Canada

Liberty War Kitchens in Washington.

A dozen or more liberty war kitchens and home demonstration groups are now under way in Washington, the work carried on by the Department of Agriculture in co-operation with the Food Administration. This work was begun last fall under the war emergency fund appropriated by Congress for teaching food conservation and it is now being carried out on an enlarged and broadened basis, taking in many new clubs and working groups. The kitchens are to serve as models for kitchens in other cities.

The women in charge of the work in Washington are Miss Grace Schaeffer and Miss Aubyn Chinn, of the Department of Agriculture, with Miss Dorothy Bantz. The plan is to conduct demonstrations in the various districts of the city, giving special emphasis not only to food values and culinary possibilities of food substitutes suggested by the Food Administration, but their economic value as well.

Conservation in Ohio.

Hotels, clubs and restaurants in Ohio saved in the month of December, 1917, exactly twice the amount of wheat flour reported for November, showed an increase of 40 per cent in their meat savings, and of 36 per cent in sugar. Ben. H. Harmon, hotel representative for the Federal Food Administration in Ohio, has reported to the U. S. Food Administration that public eating places in his state saved in December: 395,745 pounds of beef; 197,348 pounds of pork; 29,494 pounds of mutton, and 121,608 pounds of other meats—a total meat saving of 651,195 pounds. The flour savings ran to 262,310 pounds, and that of sugar to 181,455 pounds.

Mr. Harmon reported that all men or women who complain about strict observance of the wheatless and meatless days and meals in Ohio hotels are being invited to put their complaints in writing, in order that they might be forwarded to the Food Administration at Washington. This has been found in every case to quiet the complainant, who usually

comes back to apologize, explaining that it was merely a bit of temporary bad humor which had prompted the "kick."

Sales of Canned Foods for Future Delivery.

The U. S. Food Administration's ruling prohibiting the sale of canned foods for future delivery before February 1 permits canners and wholesale grocers to negotiate sales after that date.

Canners are required to make frequent reports of sales made and the prices at which they sell are subject to revision by the Food Administration in case they represent more than a reasonable advance over the average cost of the season's pack of each canner.

Sugar With Theater Tickets Not Allowed.

Promises that sugar would be given away with tickets to a theater in Paterson, N. J., have led to another suspension of a Food Administration license. D. Nochimson, a wholesale grocer, will be forced to close his doors for the entire month of February and has been forbidden to deal in any commodities licensed under the Food Control Act. Should he fail to observe this order, his license will be permanently revoked, according to an announcement issued by the United States Food Administration.

Nochimson was tried on the specific charge of having sold to an individual more sugar than was required for a reasonable length of time. The sale was made to Lew Watson, manager of the Orpheum Theater. In his defense Nochimson claimed that a man unknown to him had asked for a price on 400 pounds of sugar. He said he took for granted that the man was a dealer. The price being satisfactory, Watson purchased and advertised in December that one pound would be given away with each 375 tickets bearing lucky numbers.

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Infinite Variety
Large Capacities
Prompt Deliveries

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WITH OFFICES IN ALL LARGE CITIES

WM. J. MOXLEY'S

"SPECIAL" OLEOMARGARINE

The Taste Is
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Where
Quality and
Economy Meet

Gives better satisfaction than 75 per cent of butter used. Cost one-third less. Try it and be convinced. Order a package from your dealer.

Churned by
WM. J. MOXLEY, Inc., Chicago

Meat Inspection Rules of U. S. Department of Agriculture Amended.

Realizing that in the past a great quantity of good and wholesome meat has been thrown away because of the over-stringent meat inspection regulations of the Department of Agriculture, the Bureau of Animal Industry of the Department has amended these regulations.

The regulations now provide for the passing by the inspectors of a thin carcass showing only slight lesions in the skeletal lymph glands and the viscera, or a well-nourished carcass showing well-marked lesions, in one case in the viscera, and in the other in the skeletal lymph glands, and only slight lesions elsewhere; a thin carcass, showing well-marked lesions in the viscera, or in the skeletal lymph glands, with only slight ones elsewhere, and a well-nourished carcass with well-marked lesions in both the viscera and the skeletal lymph glands, where these lesions are not both numerous and extensive, may be passed for sterilization. The amendments also provide that when an article is accidentally soiled or has absorbed a foreign odor, it may be rehandled and reinspected, and, if wholesome, sound, and healthful, it may be passed. Unsound articles may not be transported to another establishment, but articles permitted to be rehandled as above are not included in this prohibition. A special certificate for foreign importations of pork or pork products is required.

Trading in Live and Fresh Hens and Pullets Forbidden.

The Food Administration has announced that it has forbidden licensed trading in live or freshly-killed hens and pullets. Licensed dealers have been notified that fresh stock of this kind already purchased must be disposed of by February 23 and that additional stocks may not be purchased. They may still handle stored or frozen stocks.

By restricting the killing of chickens which should soon be heavy layers, the Food Administration hopes to increase the production of eggs, adding to the available market supply and at the same time allowing them to go into storage during the season of high production at a price which will not necessitate unreasonable figures for storage eggs next fall and winter. Further slaughter would possibly reduce this year's production to the danger line.

Increased cost of feeding, combined with present attractive market prices, has influenced many poultry raisers to dispose of birds which should add to the spring and summer egg production. If the slaughter should continue at the rate which has ruled in recent months, there would be a very real shortage of eggs this spring, with correspondingly high prices paid for those placed in storage.

Both the Food Administration and the Department of Agriculture have advised saving all hens and pullets for egg production. The Food Administration some time ago requested dealers to reduce the slaughter of possible egg producers, urging them to procure wherever possible cocks and cockerels. It has now taken a further step and placed the full power of its authority behind a definite prohibition. Failure to observe this ruling would constitute a violation of the Food Control Act.

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PATENTS PENDING



The New Food Product

HEBE has its own place as an economical, satisfactory, healthful feature of the food supply of your home. Combining the healthful properties of evaporated skimmed milk with the nutritious fat of the cocoanut, it is ideal for cooking as well as for use over cereals, with coffee, etc. It has the approval of domestic science experts and is used by thousands of housewives.

Hebe has been tested and recommended as follows:—

for Coffee

Hebe gives coffee a tempting, golden-brown color and enhances its flavor. Hebe helps to make delicious cocoa and chocolate.

for Cooking

Dilute Hebe with pure water to the richness desired. Use it in all recipes for soups, oyster stews, gravies, sauces, creaming vegetables and fish, making custard, cookies, puddings, desserts, etc.

for Cereals

Pour Hebe diluted, or undiluted if preferred, over corn flakes, wheat flakes, puffed grains, porridge, oatmeal, etc. Cereals cooked with Hebe are most appetizing.

You may live in a section where Hebe cannot be obtained. As production increases, the needs of your section will be supplied through your local retail grocer.

THE HEBE COMPANY, GENERAL OFFICES, SEATTLE, U. S. A.

Guaranteed to be pure and wholesome

The army behind the army

THE battles of months ahead are being fought right now by the army behind the army. In the kitchens and pantries of America the housewives are keeping their promise and doing their part, as they are in the many other forms of war work to which they have so nobly devoted themselves.

This great army behind the army must have co-operation, must have intelligent support—just as does the army which is in the trenches or on its way to them.

The American housewife, in her splendid work of food conservation, is entitled to find that the food she purchases will enable her to save as she tries to save.

Our institution is organized to serve the government by the most effective co-operation with the Army of American Housewives. Not only is every Wilson product satisfactory and economical

because it is handled and prepared with the *respect* due that which you will serve at your table, but we are organized to give you recipes and suggestions for the economical and beneficial use of food products and tell you how to buy them at a saving.

Write me and tell me what you want to know. I regard this as the most important service we can render you. We want to make our organization the Intelligence Department of "The Army Behind the Army."

Thos. E. Wilson
President, Wilson & Co., Chicago.



Be Sure to Buy

WARD'S OATEN-LOAF BREAD

the first of our new food conservation loaves. Contains 80 per cent wheat, maximum, and 20 per cent selected oats, minimum. A true wheat saving loaf with a distinctive and palatable flavor. Excellent keeping qualities. Makes delicious toast.

WARD experience, skill and scientific baking methods guarantee its fine quality.

IN ONE POUND WRAPPED
LOAVES

WARD BAKING CO.

Co-operation of Society of Milling and Baking Technology and Society of Cereal Chemists.

Volunteer baking experts and chemists will soon be speaking under the auspices of the United States Food Administration, addressing millers and bakers throughout the country. Milling and baking chemists are preparing to map out a campaign that will give the greatest possible value to their assistance in instructing bakers how best to utilize wheat substitutes in "Victory Bread" and other war-time doughs, and working out for the millers many technical details brought out by the new milling requirements and the necessity for increased production of new types of flour. One of the principal steps in this campaign will be the selection of volunteer speakers.

Working plans will be mapped out at meetings to be held at the Chemists' Club in New York on February 12, and at the Hotel La Salle in Chicago on February 15. Leading chemists have promised their support and declare that members of both the American Society of Milling and Baking Technology and the American Society of Cereal Chemists realize that never before have they had greater opportunities to serve the nation.

Dr. Benjamin R. Jacobs, president of the Society of Milling and Baking Technology, and one of the bread and baking technical experts connected with the Food Administration, will preside at both meetings, which have been called by C. J. Patterson, president of the Society of Cereal Chemists.

The Colgate Suit of Great Trade Interest.

It is regrettable, says the *Journal of Commerce*, from the standpoint of having a vital question settled on its merits, that the action of the Government against Colgate & Co.—a prosecution based on "price maintenance" considerations—should come at a time when every one in the food trade is so thoroughly engrossed with other problems that the importance of the action is overlooked.

The Government has gone much further in this action than in any previous attack on price maintenance and it acted only after Colgate had decided to stand and fight for what it deems its common law rights as a merchant, rather than avoid litigation by accepting the Government's decree. Wherefore it is manifestly a battle to a finish on its merits.

In this case, as it is presented by Messrs. Dunn and Trowbridge, there was no agreement between the manufacturer and distributor as to resale price, nor any effort to compel the distributor to withhold goods from any sub-distributor who might offend. The manufacturer had, however, stated what he regarded as the right price, born of experience and his knowledge of competitive conditions facing his goods, and had refused to sell goods to those who were antagonizing his wishes: whether in price or otherwise.

This is a different setting of facts from that of any of the previous test cases. The Government seems to challenge Colgate's right to choose his customers, something not heretofore questioned in any previous litigation. Colgate is not in any way a monopolist; there are hundreds of makers of similar products, whose goods could have been handled by any distributor, had he chosen to resort to them. Instead he insisted on Colgate's. It would appear as though this whole case tests the right of a brand owner to protect his own name from misuse by other people and in that respect the case is likely to prove a landmark.



At the Chicago Patriotic Food Show

Nearly One Hundred Thousand People
GRASPED THE SIGNIFICANCE
of the
DRYVENTOR

The exhibit of a standard single-compartment (Community Size) DRYVENTOR in actual operation, demonstrated to thousands of visitors the real significance of dehydration. Potatoes, onions, carrots, cabbage, turnips, apples, and other products were prepared and dehydrated in the visitor's presence. The dehydrated products, reduced in bulk from 40 to 60 per cent and in weight from 60 to 90 per cent, were cooked in the demonstrating section and were tasted by hundreds of visitors who pronounced the DRYVENTOR product equal or superior to the fresh vegetable or fruit.

Besides the actual demonstration of the process and the product, opportunity was afforded to broaden the visitor's appreciation of dehydration as a means for preventing the loss of surplus production, and for preserving perishable products in a palatable and nutritious form. By explaining that the DRYVENTOR SYSTEM decreases the consumer's cost because it decreases loss and marketing expense, the enthusiastic co-operation of the visiting public was enlisted and a ready market assured. This market will grow because the housewife has discovered the economy, convenience, and quality of the DRYVENTOR product.

This company manufactures and installs DRYVENTOR plants of any capacity.

GROW WITH THE INDUSTRY. Write

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Will dissolve more readily than any form hitherto introduced. When ordering, specify

20 MULE TEAM GRANULATED BORIC ACID

U. S. P.

PACIFIC COAST BORAX COMPANY

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DR. PRICE'S VANILLA

Is Made From the

Finest Mexican Vanilla Beans

The same high quality is found in Price's

Lemon, Orange, Raspberry and Strawberry

PURE FRUIT EXTRACTS

Price Flavoring Extract Co.

CHICAGO, ILL.

New Flour Standard Fixed by Canadian Government.

The Canadian Government has fixed a new flour standard, effective on and after January 28, 1918. All mills after this date must manufacture flour on a basis of one barrel of flour from each 265 pounds of wheat. The amount of grain generally used in the past has been 300 pounds.

Under the new regulations the standard grades of flour with which the trade has become familiar, first and second patents and strong bakers, will cease to exist, and in their place will come the new standard of 74 per cent extraction. It is estimated that on the first patents there will be a saving of 35 pounds of grain in each 300 pounds. The new flour, containing, as it does, a higher percentage of shorts and bran than the flour usually sold, will be somewhat darker in color. The mills will be permitted to mill different grades of wheat, but whether the Manitoba wheat is milled, or Ontario wheat, or a mixture of the two, it will be imperative to mill up to the 74 per cent basis.

There has been no price set up to the present time, but the probability is that the new flour will sell at \$11 or \$11.10, carload basis; this is in accordance with the price of \$11 prevailing on Manitoba second patents, carload basis.

Profit on Milk Is Fixed by Canada's Food Controller.

The profit which milk distributors can make on their product has been limited by the Food Controller.

After January 1, the amount added to the actual cost of the milk must not exceed such cost by more than 5¼c per quart anywhere in the Provinces of Manitoba, Saskatchewan, Alberta and British Columbia, or by more than 5c per quart anywhere in Ontario, Quebec, Nova Scotia, New Brunswick or Prince Edward Island. No distributor selling milk in any locality where the amount now paid to distributors is less than the maximum prescribed in the order may increase such amount without the written consent of the Food Controller.

Retail dealers are forbidden to charge a higher price for milk than the milk distributors charge the consumers in the same locality. If the cost of labor or other factors increase the cost of distribution, any distributor may submit evidence to the Food Controller and make application for an increase in the margin allowed in that province. The Order gives effect to the recommendation of the special committee which was appointed by the Food Controller to consider questions in regard to milk supply for urban municipalities.

In Italy.

Food conditions in Italy vary with different communes and in general each commune has been left free to deal with its own situation. Rome began to use bread, macaroni and rice tickets on December 3. Milan was placed under general rationing January 1. The average bread ration runs from about 250 grams a day to 500 grams for workers and 600 grams for soldiers. At Milan 200 grams of butter are permitted a month and of sugar 400 grams a month. Taking 100 grams to be equivalent to about three ounces, we can get an understanding of these amounts. Thus the bread ration per day runs from 8 to 15 or 18 ounces.

Prices of beef in Rome in December were from 4 to 7 lire a kilogram, or 40 to 75 cents a pound; veal from 35 to 70 cents a pound. Pork prices had been set at 55 cents a pound, but they sold one-third higher than authorized prices. Adulterated butter sold from \$1.50 to \$1.60 a kilogram. A kilogram is 2 1/5 pounds. These figures are taken from daily papers of Italy.

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Never surpassed in wholesomeness, leavening or keeping qualities. Immense output. Low price.

J. C. Grant Chemical Co., E. St. Louis, Ill.**Illinois Vinegar Mfg. Company**

19th AND ROCKWELL STREETS

CHICAGO, ILL.**MANUFACTURERS OF HIGH GRADE
DISTILLED VINEGAR****Canned Salmon****ALL GRADES ALL SIZES****Largest Distributors
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The American Food Journal

15 South Market Street, Chicago

U. S.-Canadian Fisheries Conference.

The Canadian delegates to the American-Canadian Fisheries Conference arrived in Washington January 15. During their stay in Washington they resided at the Lafayette Hotel, while offices were set apart for their use at the Commerce Building.

The Canadian delegates were the Hon. J. Douglas Hazen, chief justice of New Brunswick, who was for six years Minister of Marine and Fisheries in Canada; Mr. George J. Desbarats, C. M. G., C. E., deputy minister of naval service, and Mr. William A. Found, superintendent of fisheries. Mr. Arnold Robertson, C. M. G., first secretary of the British Embassy, was secretary of the Canadian delegation.

The American delegation was composed of the Hon. William C. Redfield, secretary of commerce; Mr. Edwin F. Sweet, assistant secretary of commerce, and Dr. Hugh M. Smith, commissioner of fisheries. Mr. Maitland Dwight, of the Department of State, was secretary of the American delegation, and Mr. Edward T. Quigley, assistant solicitor of the Department of Commerce, was assistant secretary and legal adviser.

The delegates met informally at the office of Mr. Secretary Redfield in the Commerce Building on the morning of January 16, and at the suggestion of Mr. Chief Justice Hazen, Mr. Secretary Redfield was chosen to preside at the conference. The sessions all were marked by unanimity of thought and harmony of purpose.

The members of the conference plan to take advantage of the fact that Canada and the United States are now associates in the war and therefore have aims more akin than ever before. They agreed that this was the vital moment for smoothing away difficulties which had been for many years sources of irritation to the people of the United States and Canada, and that the basic thought of the delegates, especially in view of the present food crisis from which the whole world is suffering, should be the supply of the largest amount of fish to the largest number of people in both the Atlantic and Pacific coasts.

Among the questions discussed were:

The protection of the salmon in and around the Fraser River; the protection of the halibut which has been overfished, the center of this industry being Seattle, Vancouver, Prince Rupert and Ketchikan, on the Pacific; equitable rules governing the use of Canadian and American ports by the fishing vessels of both countries, however propelled; the lobster fisheries of the Atlantic; pike-perch fishing in Lake Champlain; and the possible passage of rules relating to the whale industry.

The entire joint commission will hold hearings at an early date in Boston and Gloucester and in the maritime Provinces of Canada. It is expected that the commissioners will also hold hearings in the Pacific Northwest and in British Columbia, and at other places if necessary.

**The Only Cocoa
at the Patriotic Food Show**

Chicago Coliseum, Jan. 5th to 13th

Bunte Dutch Process Cocoa

THE AMERICAN FOOD JOURNAL



With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

ROBERT GORDON GOULD, *Editor*

Vol. XIII

MARCH, 1918.

No. 3

Benzoate of Soda in Nut Margarine

THE excellent magazine, *Good Housekeeping*, conducts a department under the caption, "Dr. Wiley's Question Box," in which appear inquiries from readers answered by Dr. Harvey W. Wiley, Washington, D. C. In the February issue two letters from subscribers bear upon the use of nut margarine containing benzoate of soda, asking whether or not it is safe to use such products. As Dr. Wiley's replies to these inquiries convey a distinctly erroneous impression, it may be of interest to refresh our memories as to the actual facts in the case.

As many of our readers recall, the Food and Drugs Act became law June 30, 1906. About a year later (July 13, 1907) Federal Inspection Decision 76 was issued, in which the Board of Food and Drug Inspection stated that, pending investigations as to the effects upon health of the product in question, no objection would be raised to the use for the time being of benzoate of soda in food when not used in quantities exceeding one-tenth of 1 per cent, provided a statement of the use of this preservative was made on the label.

On February 20, 1908, the then Secretary of Agriculture organized a board composed of five scientific consulting experts—Dr. Ira Remsen, president of Johns Hopkins University, Dr. Russell H. Chittenden of Yale University, Dr. John H. Long of Northwestern University, Dr. Alonzo E. Taylor of the University of California, and Dr. C. A. Herter of the College of Physicians and Surgeons of Columbia University—one of the duties of which was to consider and report upon the wholesomeness or the deleterious character of benzoate of soda when used as a preservative in food.

On March 5, 1908, there was issued Food Inspection Decision 89, reading, in part, as follows:

"Pending determination by the Referee Board of the wholesomeness or unwholesomeness of these substances (*benzoate of soda being one*) their use will be allowed under the following restrictions:

"Benzoate of soda, in quantities not exceeding one-

tenth of 1 per cent, may be added to those foods in which generally heretofore it has been so used. The addition of benzoate of soda shall be plainly stated upon the label of each package of such food."

On July 20, 1908, Bulletin 84 of the Bureau of Chemistry was published in which Dr. Harvey W. Wiley—at that time Chief of the Bureau—stated on page 1293, Part IV:

"It is evident that the administration of benzoic acid, either as such or in the form of benzoate of soda, is highly objectionable and produces a very serious disturbance of the metabolic functions attended with injury to digestion and health * * *.

"These injurious effects are evident in the medical and clinical data which show grave disturbances of digestion, attended by phenomena which are clearly indicative of irritation, nausea, headache, and in a few cases vomiting."

That the Wiley premature promulgation had a disturbing effect was made evident by Food Inspection Decision 101 which was issued December 26, 1908, and reads, in part, as follows:

"Frequent inquiries have been received by the Department in regard to the use of benzoate of soda in foods. The following is typical of this class of inquiries:

"In F. I. D. 89, the position of the National authorities in regard to the use of benzoate of soda is to allow its use in food, pending the report of the Referee Board of Consulting Scientific Experts. Based upon Bulletin 84, Part IV, of the Bureau of Chemistry, issued subsequent to Food Inspection Decision 89, certain manufacturers of food products are representing to the officials of the states, charged with the enforcement of food laws, and to the consuming public generally, that the U. S. Government has condemned the use of benzoate in foods. We write to ask the position of the Department on this subject."

"The Department has not changed the position outlined in Food Inspection Decision 89."

On March 3, 1909, Secretaries Cortelyou, Wilson and Straus sent forth Food Inspection Decision 104, which read:

"The Referee Board of Consulting Scientific Experts, composed of Dr. Ira Remsen, Dr. Russell H. Chittenden, Dr. John H. Long, Dr. Alonzo E. Taylor and Dr. C. A. Herter, have reported upon the use of benzoate of soda in foods. The Board reports, as a result of three extensive and exhaustive investigations, that benzoate of soda mixed with food is not deleterious or poisonous and is not injurious to health. The summary of the report of the Referee Board is published herewith:

"It having been determined that benzoate of soda mixed with food is not deleterious or poisonous and is not injurious to health, no objection will be raised under the Food and Drugs Act to the use in food of benzoate of soda, provided that each container or package of such food is plainly labeled to show the presence and amount of benzoate of soda.

"Food Inspection Decisions 76 and 89 are amended accordingly."

Dr. Wiley left the Government employ on March 15, 1912, and since that time there has been no objection by Federal authorities to the legal use of benzoate of soda in food.

Here we have the sorry spectacle of an ex-government official quoting in 1918 a bulletin containing alleged physiological findings which were in 1909 flatly contradicted by five of the leading physiological chemists in the country, their report being the basis of formal action on the part of the Government. This action has from that time to the present been the law of the land, although directly contrary to Dr. Wiley's predilections.

As *Good Housekeeping* has a large circulation, much unjustified uneasiness among the uninformed laity may be caused by the action of this ex-government official in blandly maintaining that "Indigestion and headache may probably be due to the influence of benzoate of soda. * * * Benzoic acid is regarded as a toxic agent by all physiologists. The human body also regards benzoic acid as a toxic agent, and immediately converts it into hippuric acid, in order that it may do as little harm as possible. Food products that contain benzoate of soda are inferior in quality to similar foods manufactured without it"—the last being a gratuitous insult offered all manufacturers who seek to make use of what has been decided by practically every one, except Dr. Wiley, to be the best form of preservative available for certain types of food.

The author heads his article "Banquo's Ghost Will Not Down"; he should have introduced it with the oft-quoted remark of the fond mother of the raw recruit, "Every man in the regiment is out of step except my Jamie." Indeed, there would be something particularly appropriate in his introducing his scientific pronouncements with a joke.

Baking Powder Definition Signed.

On February 26, 1918, the Secretary of Agriculture signed the following definition and standard for baking powder.

(Copy)

United States Department of Agriculture, Office of the Secretary, Washington, D. C.
Food Inspection Decision No.

BAKING POWDER.

The following definition and standard for baking powder was adopted by the Joint Committee on Defini-

tions and Standards, November 18, 1916, and was approved by the Executive Committee of the Association of American Dairy, Food and Drug Officials for the Association of American Dairy, Food and Drug Officials April 2, 1917, and by the Association of Official Agricultural Chemists, November 22, 1916.

Baking powder is the leavening agent produced by the mixing of an acid reacting material* and sodium bicarbonate, with or without starch or flour.

It yields not less than twelve per cent (12%) of available carbon dioxide.

The acid reacting materials in baking powder are: (1) tartaric acid or its acid salts; (2) acid salts of phosphoric acid; (3) compounds of aluminum; or (4) any combination in substantial proportions of the foregoing.

*The announcement of the amount of calcium sulphate which reacts as an acid reacting material in baking powder is reserved pending further investigation.

The announcement of the amount of other salts of phosphoric acid which react in baking powder is reserved pending further investigation.

Baking powder materials should be as free from metallic impurities as it is feasible for a manufacturer to make them. The announcement of the limits for arsenic, lead, zinc and fluorides is reserved pending further investigation.

The foregoing definition and standard is adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

D. F. HOUSTON,
Secretary of Agriculture.

Washington, D. C., February 26, 1918.

It will be noted that the new standard establishes the allowable minimum for available carbon dioxide at 12 per cent. At present the highest percentage in states having laws covering this point is 10 per cent. This is a matter of importance to all baking powder manufacturers as the present federal action will no doubt soon be followed by state laws establishing the 12 per cent minimum. In fact, 23 states have food laws of such nature as to call for immediate and automatic incorporation in their statutes of all federal rulings such as the present one.

The foregoing definition and standard will, no doubt, be published soon as a Service and Regulatory Notice of the Bureau of Chemistry.

Ohio Milk Commission.

A Federal Milk Commission for Ohio has been appointed by the U. S. Food Administration to take up the problem of milk prices in Ohio. This action is in line with the Administration's policy in meeting the country-wide unrest in regard to milk prices. The Ohio Commission, like the other Federal Commissions, will hold sessions open to the public.

The Heney Investigation.

For several weeks the newspapers have been devoting much space to an *ex parte* investigation of the Chicago packers. Up to date this investigation has consisted of Mr. Francis J. Heney's reading into the record, and consequently into print, letters which a few months ago passed from packer to packer, all of which letters have some bearing upon the war.

That those who rely for their information upon the daily press may not be misled, it should be borne in mind that the Heney investigation is in no sense a lawsuit. But one side has been heard and that side has had the privilege of reading fragments from more or less confidential office correspondence and routine data. As in all *ex parte* proceedings, this sort of thing lends itself readily to giving a sinister aspect to the most innocent of documents.

In passing, it should be borne in mind also that Mr. Heney is, so the gossips say, by way of being an ambitious politician in his native state—California. At the time of his connection with the Abe Reuf scandal in San Francisco he displayed a decided talent for the theatric, and it is only logical to expect him to make the most of his present opportunity. All of which may be good politics but should not be allowed to disturb the poise of such of his audience as are level-headed.

Many points have been dilated upon, ranging from the allegation that the packers have conspired to establish prices on the various products they handle to charges of such subtleties as "planting" trusty members of their staffs in various government bodies. In refutation of the claim that the packers hoodwinked Mr. Hoover by virtue of their manifold activities our Food Controller recently issued the following statement:

On behalf of, and out of consideration for, the men referred to in the packers' investigation at Chicago who are, or have been employed in the Food Administration, I wish to say that none of the men referred to have had anything whatever to do with the regulation or control of the packing trade. They are employed in other directions and not now paid by the packers.

From time to time, as in these cases, many men are tried out, temporarily, in the Food Administration and if they are able to give the time and prove to have the devotion, experience, and skill necessary for this work they are required to resign from any connection that would involve any conflict of interest before they become permanent employes of the Administration.

All of the men referred to have rendered valuable service to the Government at considerable sacrifice to themselves and there is no question whatever as to their loyalty to the public interest.

HERBERT HOOVER.

While it is still too early to insist upon any points other than the propriety of holding in abeyance opinions which, if formed now, might be erroneous, this JOURNAL believes that the following letters will be of interest. They are in themselves self-explanatory:

March 1, 1918.

R. G. Gould, Esq.,

THE AMERICAN FOOD JOURNAL,

15 S. Market Street, Chicago, Ill.

Dear Mr. Gould:

We certainly appreciate your letter of February 27th regarding the Heney investigation. Of course, in any investigation or other legal matter if one side has its say, without the other being represented, there is considerable chance for the creation of false impressions and the setting up of things which are either erroneous or untrue.

It seems to us almost unbelievable, that in these times when the winning of the war ought to be uppermost, one bureau of the Government should be seeking not only to tear down the effectiveness of large industrial units handling supplies, such as ours, but in their ambition to make a political showing, even to cast aspersions upon the character of the individuals and the good faith of the regulation of the other government agencies which are trying to perform their legal functions.

We feel sure that finally the right will prevail and that the public will reach the correct conclusion as to

the basic integrity between the relation of our company and the various commissions and bureaus with which we come in contact, as well as the legality of our actions and the good faith with which all our people have endeavored to aid in the war work of the Government.

Yours very truly,

THOS. CREIGHT.

Attorney for Cudahy Packing Co.

Chicago, March 7, 1918.

Mr. Robert G. Gould, Editor,

THE AMERICAN FOOD JOURNAL,

15 South Market Street, Chicago.

Dear Sir:

In view of the great amount of publicity recently given to charges made against the packers during the investigation by the Federal Trade Commission, it has occurred to us that you and your readers may be interested in a statement explaining the facts of the situation.

The investigation by the Trade Commission began last summer, when its accountants were given free access to our books and records, and this investigation promised to be an impartial one based upon actual facts and figures. More recently, however, the Trade Commission has employed the services of Mr. Francis J. Heney, candidate for Governor of California, who has been holding hearings in various parts of the country.

Agents of the Trade Commission requested access to the confidential files of the executives of Swift & Company, and this request was granted.

As Mr. L. F. Swift recently said in a public statement:

"Mr. Heney has, by false inference and misplaced emphasis, given to disconnected portions of the correspondence selected by him and read into the Trade Commission record, a false and sinister meaning, with the plain purpose of creating antagonistic public opinion."

By introducing fragmentary bits of correspondence, Mr. Heney has tried to make it appear that the packers have been unpatriotic and that their employes who have worked for the Food Administration have done so with ulterior motives. This called forth a statement from Mr. Hoover to the effect that the employes of the packers had been giving efficient and loyal service.

At these hearings, in which the packers have been placed in a false light, the packers themselves have had no representation. Unfounded and ridiculous charges have been made, without foundation of fact. Our business has not only been patriotic in its relations with the Government, but it has maintained its efficiency, and has not "fallen down" in performing the services demanded of it.

It should be further mentioned that in the alleged evidence that has been produced by Mr. Heney, there has been nothing which proves any wrong-doing on the part of the packers, or any conspiracy in restraint of trade. We believe that the American spirit of fair play will revolt against such methods as have been employed by Mr. Heney, with his political ambitions, and that they will realize that the packing industry is fundamentally sound, honest and patriotic.

Very truly yours,

SWIFT & COMPANY,

G. S. Swift, Vice-President.

The Ash of Our Foods

By GEORGE L. TELLER,
of The Columbus Laboratories, Chicago.

THE ash of our foods is of interest because it represents the greater part of certain elements which occur in foods in small quantities only. It is the non-volatile part of the material, or what remains when the product is burned under normal conditions, as in an open fire or a stove.

Ash of the edible portions of vegetables and meat consists of ten or a dozen elements which are found in each food product to the extent of only a fraction of 1 per cent or at most a very few per cent. Nearly all of these are absolutely essential to the growth and development of plants and animals and are found in all their parts. Generally speaking, all will remain in the ash, but some, like sulphur and chlorine, are lost from the ash of certain parts, such as seeds of plants, being driven out by an excess of phosphates during the burning. So, too, some of the rarer elements, like iodine, fluorine and arsenic, are lost in a similar manner, or remain in such minute quantities that their presence is not detected during the ordinary process of analysis.

With these exceptions, we can tell by examining the analyses of ashes how much of each of these elements was present in the foodstuff.

While these substances or elements are often spoken of as mineral, because they appear as minerals in the ash, they are actually—to a large extent as they exist in plants, and to a lesser extent as they exist in animals—parts of complex organic compounds. In this state they are no more mineral than the carbon, oxygen, hydrogen and nitrogen which form the bulk of organic matter and which are looked upon as the distinctive organic elements.

Students of general dietetics do not usually give the ash of foods very much consideration, chiefly because the ash material is present in most foodstuffs in such relatively large quantities that there is an abundance over what is required by the human body.

Ash material gains its chief interest from a food standpoint because of a controversy which has been waged over white flour. The ash as it is found in wheat and other cereals is distributed unequally throughout different parts of the grain. It is least abundant in the interior portion, which is made into white flour by the modern processes of milling, and most abundant in the germ and bran,* which, in the normal course of milling, are separated from the flour and united in the offal which is used as food for animals.

Certain writers have urged that by producing only white flour relatively poor in ash, material injury is done to the consumer's dietary.

It is the purpose of this paper to put in tangible form for readers of the AMERICAN FOOD JOURNAL data on this subject which is not generally available to them. It appears to the writer that with a normally-balanced supply of foodstuffs, as they are ordinarily consumed by average human beings, no deficiency exists, even when the products of white flour amount to a considerable proportion of the daily diet.

Disregarding sodium and chlorine as of little importance in the ash of foods, because of the ready man-

ner in which they are always supplied in the form of salt, and omitting sulphur, which may or may not be present in the ash in the form of sulphates, even when it is over-abundant in the foodstuff, the most important elements of ash from the food standpoint are: potassium, calcium (lime), magnesium, phosphorus and iron.

A table is given herewith showing the partial composition of the ash of various typical food products, both of plant and animal origin, in which the per cent of these several ingredients in the pure ash is shown.

Partial Percentage Composition of the Ash of Typical Foods.

	Potash, K ₂ O	Lime, CaO	Magnesia, MgO	Phosphorus Anhydride, P ₂ O ₅	Oxide of Iron, Fe ₂ O ₃
Potato	60.1	2.6	4.9	16.9	1.1
Sweet Potato	50.3	9.9	2.8	27.7	0.3
Carrots	37.0	11.3	4.4	12.8	1.0
Turnips	45.4	10.6	3.7	12.7	0.8
Onions	25.0	22.0	5.3	15.0	4.5
Cabbage	26.4	11.7	2.3	13.1	0.4
Peas	41.8	5.0	8.0	36.4	0.9
Beans	41.5	5.0	7.1	38.9	0.5
Milk	23.5	22.6	2.8	27.7	0.3
Eggs—white	31.4	2.8	2.8	4.4	0.6
Eggs—yolk	9.3	13.0	2.1	65.5	1.6
Meat	37.0	2.4	3.2	41.2	0.4
Apples	41.8	8.8	5.0	9.7	1.0
Strawberries	49.2	12.3	6.4	13.1	2.9
Grapes	53.0	6.9	3.3	21.3	1.2
Corn Meal	28.8	6.3	14.9	45.0	1.5
Oat Meal	23.7	7.4	7.8	48.2	0.8
Barley Flour	28.8	2.8	13.5	47.3	2.0
Rye Flour	38.4	3.0	8.0	48.3	2.5
Wheat Bran	28.2	2.5	14.7	52.8	0.3
Graham Flour	30.5	3.1	13.3	52.1	0.5
"Whole Wheat" Flour	31.0	5.3	11.2	50.2	0.7
Straight Grade Flour	36.3	5.6	6.4	49.3	0.3
Patent Flour	38.5	5.6	4.4	48.0	0.5

The above foodstuffs, while quite general in their selection, are only representatives of different types and might be multiplied very largely if space permitted. Thus the same facts hold true for an unending variety of foodstuffs. It will be seen that in the roots and tubers and fruits and vegetables potash forms a very considerable proportion of the ash and is more abundant than any of the other ingredients, but that phosphoric acid is always present to a considerable extent and lime and magnesia to a less extent, while iron occurs only in very small quantities. Among seeds and grains, milk, eggs and meat, phosphoric acid is more abundant, although potash is still present in very considerable quantities.

If we consult the best authorities on the amount of mineral matter required for the human body daily, we find that the requisite amounts are: phosphoric acid, 3 to 4 grams; potash, 2 to 3 grams; lime, 0.7 to 1

gram; magnesia, 0.3 to 0.5 gram; and only very small quantities of iron—making an average total of about 7 grams ($\frac{1}{4}$ ounce).

A normal man weighing 150 pounds requires daily: protein, 121 grams; fat, 59 grams; carbohydrates, 510 grams; or a total of nearly 700 grams (near 25 ounces)—100 times the required amount of ash material, as given above. In other words, the amount of ash material, distributed as shown, will be 1 per cent of the total amount of dry, digestible food.

A second table gives the number of grams in 100 grams of dry matter of each of the foodstuffs in the first table. By examining this table one readily sees the number of grams of each element supplied by 100 grams of the dry food product, or if this quantity is multiplied by 7 the result gives the amount that will be supplied by any of the several foodstuffs if the entire food material for a single day were made up of this one product.

In like manner, the reader, if he wishes, can make up a composite food consisting of several of these foodstuffs in any proportion desired. No allowance is made for the amount of undigestible matter present, as this would naturally necessitate the taking of a somewhat larger proportion of food to give the nutrient required, and this excess would carry with it a correspondingly larger proportion of ash. It should be emphasized that the quantities of ash material as given are based upon the dry matter of the material. Most foodstuffs contain greater or less quantities of water, which in the case of fruits and most vegetables may amount to 80 or 90 per cent.

Ash Grams in 100 Grams Dry Food.

	Total Pure Ash	Potash, K ₂ O	Lime, CaO	Magnesia, MgO	Phosphoric Anhydride, P ₂ O ₅	Oxide of Iron, Fe ₂ O ₃
Potato	3.8	2.3	0.1	0.2	0.64	0.04
Sweet Potato	3.1	1.6	0.3	0.1	0.86	0.01
Carrots	5.6	2.0	0.6	0.2	0.71	0.06
Turnips	8.0	3.6	0.8	0.3	1.01	0.06
Onions	5.3	1.3	1.2	0.3	0.80	0.24
Cabbage (raw)	11.3	3.0	1.3	0.3	1.48	0.04
Peas	2.7	1.1	0.1	0.4	0.98	0.03
Beans	3.6	1.5	0.2	0.3	1.40	0.02
Milk	6.2	1.5	1.4	0.2	1.71	0.02
Egg—white	4.6	1.4	0.1	0.1	0.20	0.03
Egg—yolk	2.9	0.3	0.4	0.1	1.91	0.05
Meat	5.0	1.8	0.1	0.1	2.06	0.02
Apples	1.7	0.7	0.1	0.1	0.16	0.02
Strawberries	3.4	1.7	0.4	0.2	0.44	0.10
Grapes	4.0	2.1	0.3	0.1	0.85	0.05
Corn Meal	1.3	0.4	0.1	0.2	0.59	0.02
Oat Meal	2.2	0.5	0.2	0.2	1.06	0.02
Barley Flour	2.3	0.6	0.1	0.3	1.09	0.04
Rye Flour	1.0	0.4	0.1	0.1	0.48	0.02
Wheat Bran	6.0	1.7	0.1	0.9	3.17	0.02
Graham Flour	2.1	0.6	0.06	0.3	1.09	0.01
Whole Wheat Flour	1.0	0.3	0.05	0.1	0.50	0.01
Straight Grade Flour	0.55	0.2	0.03	0.03	0.27	0.001
Patent Flour	0.40	0.15	0.02	0.02	0.19	0.002

The ash of wheat and its mill products is of special interest in this connection because, as already stated, it is the bone of contention which lends most interest to the discussion of ash elements.

An examination of the figures given shows that there is much less ash in patent and straight grade flours than there is in bran, in graham flour, or in the so-called "whole wheat" flour. A true graham flour represents the meal of the entire grain. Its ash, therefore, represents the whole amount of ash which the wheat contains. Whole wheat flour is a misnomer which has been used for a product supposed to represent graham flour with a part of the coarser bran taken out, but which may represent a low grade flour. It contains more of the bran and germ, and therefore more of the ash, than straight grade flour which consists almost wholly of the endosperm of the grain finely ground.

If our 700 grams of nutrition were derived wholly from low grade flour, containing 1 per cent ash, we should approximate the amount of ash elements we require. If it were made up wholly of patent or straight grade flour, we should have a deficiency of ash material, but if it were made up wholly of graham flour, we should have half the amount which the body requires. As a matter of fact, we do not and should not confine our diet entirely to any single food product. If we take one-third white flour products with almost any other reasonable combination of foodstuffs we have all the mineral matter required, and indeed are likely to have an excess. When we substitute graham for white flour, we increase the excess to a corresponding extent, not only without benefiting the body, but even actually taxing it with the task of eliminating the excess ash.

What is true of the ash in this connection is also true of other valuable food elements, both the grosser constituents, such as protein, fat and starch, and the less clearly defined *something*, associated with the name *vitamines*, which is supposed to be present in bran in minute quantities and which appears to relieve certain conditions brought about in animals by its absence. As proof of this assertion we have but to remember that animals and man have lived for many generations without the use of any wheat whatever.

There is another feature of this problem which should not be forgotten, namely, the value of the ash elements and the nitrogen which the bran contains as a source of soil fertility when used as a manure after being fed to domestic animals. When consumed by man, these elements of fertility are almost wholly lost in sewage.

The writer, more than 20 years ago, made a careful study of this subject. The report as made at that time, was somewhat as follows: of the valuable fertilizing elements which occur in wheat, mill products used for stock food contain about seven-eighths of the phosphoric acid, eleven-fourteenths of the potash and three-eighths of the total nitrogen. The total value of these three fertilizing elements, based upon the current market prices at which they could be obtained in market centers, was \$7.50 for 50 bushels of wheat. Almost half of this value of fertilizing elements is found in the bran and other offal. When these products are fed to animals, little of the fertilizing elements is retained by the animals. If the bran is returned from the mill and fed to stock, and the resulting manure is carefully saved, nearly one-half of the soil fertility otherwise lost in the selling of the wheat will be preserved and the live stock will have the benefit of a most excellent concentrated food.

What was true then is true to a larger extent at the present time. The European war has practically shut off the supply of potash and the price of combined nitrogen is probably without precedent in this country. I have recently obtained from the best authority in the United States the price at which these same fertilizing elements were obtainable, in limited quantities only, last year, and at those prices the value of the fertilizing elements, as given above, would be \$21.30 for the 50 bushels of wheat. The same authority states that the price of these same fertilizing elements would quite certainly be from 40 to 60 per cent higher

for the coming year, making their probable value more than \$30 for 50 bushels of wheat. Nearly one-half of this value could be returned to the soil by proper feeding of animals. The dearth of fertilizers of all kinds, due to war conditions, is certain to cut down materially the yield of farm crops in all the older sections of the country, and it is a point of national economy that every effort should be made to preserve the soil fertility and return to the soil as much as possible of its constituents which are annually removed through the growing of crops and the natural wastage due to leaching of the soil by water and other causes.

Making Dairy Products Standard

By L. W. COULSON, of Armour & Co.

A world market for the products of the dairy farm has been brought about by reason of the entrance into the dairy field of the large food-purveying firms, such as Armour and Company. No longer is the market of the dairyman restricted to his immediate vicinity; the distributive systems now at his disposal make it possible for him to send his wares to the best markets, wherever they may be, and to assure the maintenance of quality en route.

The immediate result of the packers going into the dairy products business is an assured market at better prices for producers and a certain supply of standard quality at more stable prices for consumers.

A few years ago quality in the butter and cheese bought of the retailer was exceedingly uncertain, and the supply as varying as the seasons. Even when the supply was at its maximum, the quality was never dependable. While out of season, top prices were often paid for a product which today would never reach the market because of poor quality.

Now butter and cheese are quality products the year round and are purchased by brand name with faith that the quality will be uniform at all times.

Like the standards for so many foods, the establishment of a uniform grade of butter and cheese has been due to the development of the refrigerator car and cold storage system of the country.

These, together, render possible a more uniform distribution of standardized foods from coast to coast. And undoubtedly it was Armour and Company's contact with the farmer and retailer which pointed out to them the necessity of bringing order out of the chaotic conditions existing in the dairy field.

Previous to the establishment of cold storage plants throughout the country, the producers of butter and cheese were dependent to a very large extent upon the local demands. Cheese, because it lent itself more readily to transportation and because its manufacture was more localized, had the wider market. Yet the cheese-maker was far from prosperous. He had to dispose of his output through commission men. He had to take his chance on these men selling his output and then had to wait nearly a year for his money, so that he was constantly on the verge of bankruptcy.

Cheese must be kept cool and at a uniform temperature, if it is to hold its quality. Such a thing was impossible under former conditions. Then, no matter how good a cheese was on leaving the factory, because of varying temperature and fluctuating weather conditions encountered during shipment it was frequently

found on reach the consumer to be inedible, particularly if it had to be shipped any distance.

But today, no matter in what part of the country the consumer may live, he receives his butter and cheese in the same fine condition they left the maker. If we were to visit a factory in the great dairy state of Wisconsin, we would see a refrigerator car back up to the warehouse door. The temperature of this car would be the same as that maintained in the cheese factory. On its way, the car would be iced at such intervals as necessary to keep the temperature the same. On arriving at its destination the cheese is taken from the car and placed in cold storage until the retailer orders out one or two cheeses to supply his demands. If the distance is great, these cheeses will undoubtedly be shipped in refrigerator cars. In this way the cheese reaches the consumer in perfect condition. He knows that when he buys American cream cheese the taste will be just what he expected.

Wider distribution, larger purchasing power, increased sales and a decrease in the risk enables this better product to be sold at even a less price than would otherwise be possible.

This increased demand and wider distribution has aided the producer as well as the consumer. Co-operation between the distributors and consumers has made possible the manufacturing of a more uniform product the year through. The factory standards have been raised so there is less opportunity for the product to vary in quality. And where there is a variance it is quickly detected, since both producer and distributor are on the lookout, and at once an expert is called in to find the trouble and correct it.

In the dairy district of Wisconsin this has resulted in a considerable extension of dairying activities. In 1914 the dairy business of that state was more than 10 per cent of the total manufactured products. Perhaps the most notable extension has been that in evaporated milk. In 1904 there was produced in Wisconsin 30,000,000 pounds of condensed and evaporated milk. In 1914 this had increased to 150,000,000 pounds. Since then the war has caused another enormous increase. Four years ago we exported but 16,000,000 pounds. Last year more than 350,000,000 pounds—more than twenty times as much—were exported.

Meeting these unprecedented demands has been made possible through the extensive distributing systems and world-wide organizations of the world's greatest food concerns.

A Review of the Milk Situation

BY THE EDITOR.

NEXT to the wheat and meat problems, the milk situation today has the most vital interest for the people of this country. Every day the demand for milk and its products grows throughout the world, keeping pace with the education of the public in the food value of milk. Only of late is the public learning that milk is one of our very cheapest foods—that milk costs less than 2 cents per 100 calories, while bacon costs over 2 cents, sliced ham almost $2\frac{1}{2}$ cents, pork chops $2\frac{2}{3}$ cents, a leg of mutton $3\frac{2}{5}$ cents, salmon and roast beef over $4\frac{1}{2}$ cents, fresh eggs $7\frac{4}{5}$ cents, and a broiled chicken over 14 cents.

But the public is by no means sufficiently educated as yet. It still objects strenuously to any proposal to raise milk prices, however much all other food prices may have gone up. There is just as much danger on one side of the question as on the other: while it is true that too high prices will discourage consumption, it is equally true that too low prices will discourage production. In either case the public and the milk producer are both bound to suffer.

Thus it is that every large city in this country has had, or is having, its commission to investigate the local milk situation. In each case three interests have been represented—producers, distributors and consumers, the only point of agreement among any of them being the common claim of the two former that prices must be raised to the consumer—which of the two is to profit most by the increase being the issue upon which they split. In each instance both dairy-men and dealers have agreed to abide by the commission's findings and to accept the prices fixed upon. How to coerce the consumer, should the findings not be to his liking in every respect, is another and a far more difficult matter. Unfortunately for everybody, he is not so tractable.

The First Chicago Investigation.

This conclusion is also borne out by the Chicago investigations. The first of these was carried out by the Committee on Public Health of the Chicago City Council, which held three hearings on the question of distribution of milk and submitted to the City Council a detailed report with seven recommendations. The gist was as follows:

The cost of handling and delivering milk represents over 50 per cent of the total cost. Production, sanitary handling and transportation have been brought to a high plane of excellence; the cost of bringing the milk from the receiving depot of the distributor to the home of the consumer is where saving must be made. By the recent merging of two milk companies in Chicago, each of which ran 30 wagons in the same territory, 18 wagons were eliminated. It is estimated that the carrying out of such a system for the city would save the people of Chicago \$20,000 a day. For purposes of comparison the Committee obtained from 29 other cities statements of the retail quart price, the price per 100 pounds to the producer, and the average daily consumption of milk in those cities. In three cities the retail price was 14 cents; in seven cities, 13 cents; in 12 cities, including Chicago, 12 cents; in five cities, 11 cents; and in three cities, 10 cents. In Minneapolis the State Public Safety Commission on November 15 fixed the retail price of milk at 10 cents

a quart and required milkmen to zone their routes to prevent overlapping.

Of the cities where the producer was paid by the distributor the same price as in Chicago—\$3.22 per 100 pounds—the consumer paid 14 cents a quart in East St. Louis; 13 cents in St. Louis and Aurora, Ill.; 12 cents in Chicago, Philadelphia, Fort Wayne and Rockford, Ill.; 11 cents in Elgin, Ill.; and 10 cents in Belvidere, Ill. Although the distributor paid the producer \$3.36 per 100 pounds in Cleveland, \$3.58 in Joliet, Ill., \$3.50 in Los Angeles and Kansas City, and \$3.30 in Milwaukee and Wheaton, Ill., the price per quart to the consumer in the first four cities was not higher than that prevailing in Chicago, where the producer receives only \$3.22 per 100 pounds, and in the last two cities it was only 11 cents, as against the 12-cent Chicago price. (In other words, in these six cities the farmer received more for his product and the consumer paid less than in Chicago. The saving quite evidently came out of the pocket of the middle-man—the distributor.)

The Committee made seven recommendations for dealing with the situation: (1) that the entire matter be referred to the Federal Food Administrator for Illinois, who has powers broad enough to handle it; and that he should fix just prices through the Federal Milk Commission recently appointed by him, with the purpose of setting a lower price to the consumer; (2) that a single zonal milk distributing system be established under the control of the Food Administration or the City Council; (3) that co-operative societies of producers be formed by the Food Administration with the sole right to deliver milk to consumers wherever they can do so more cheaply than distributors or dealers, and where the latter have failed to effect economies through consolidation and unification of delivery routes and services; (4) that the State Legislature be requested to enact a law giving the City power to engage in the public control, supply and distribution of necessities of life wherever the situation requires such a measure of relief; (5) that the Legislature enact a law permitting the formation of co-operative associations of producers and consumers under proper state control to engage in the production, distribution, etc., of milk and other food products; (6) that the State Food Administrator establish a milk station or stations to supply small customers and provide for sale of milk at milk stores and distributors' depots without the cost of delivery; (7) that the ordinance prohibiting use of milk bottles for purposes other than milk delivery be amended to provide for the compulsory return of bottles to the distributor or dealer.

The Second Chicago Commission.

It will be noted that this Committee had no authority to settle the question of fair prices and that it recommended that the Commission appointed by the Food Administrator for Illinois should take up that problem, thoroughly review the entire situation as it related to prices, and endeavor to lower the price of milk to the consumer. This Milk Commission has only just concluded its hearings.

During these hearings much conflicting testimony has been given and argument has waxed somewhat

more warm than dignified. Experts have been put on the stand by all parties; sometimes their testimony has agreed; more often it has not. The formulas for feeding dairy cows as given by Professor Pearson of the University of Illinois—upon which the price of milk was set at \$3.42 at the September convention of the milk producers which resulted in several indictments of members of the Milk Producers' Association—was found not to differ very materially from that given by J. B. Bain, cost expert for the Dairy Division of the U. S. Department of Agriculture. Mr. Bain's formula to produce 100 pounds of milk called for: 41.1 pounds of grain against 44 called for by Professor Pearson; 151.1 against 188 of silage; 20.3 against 39 of bedding; 45.1 against 50 of hay. He added, however, 22.8 pounds of "roughage," such as corn fodder, not included in Professor Pearson's formula. Mr. Bain's testimony was considered by the milk producers very strongly in their favor, coming as it did from a government expert who was admittedly unprejudiced and could have no personal reason for agreeing with the experts put on by the producers.

On the other hand, inspectors testified for Dr. Robertson of the Chicago Health Department that in districts of Indiana, Iowa and Wisconsin outside the "milk zone" from which milk may be shipped to Chicago, milk sold in November at from \$2.10 to \$3 a hundred pounds, and one inspector stated that he believed he could buy milk in Iowa for Chicago delivery for \$2.75.

Dr. W. A. Evans, health editor of *The Chicago Tribune*, warned the Commission that further increases in the price of milk will mean the eventual ruin of the dairy industry because of the refusal of customers to buy at such prices, and an increased infant death rate. He answered Mr. Bain's testimony by declaring that no fair feeding test can be made without taking into consideration the health of the cattle. The presence of tubercular cattle in Illinois herds he declared to be partly responsible for the present high cost of production. He called attention to the fact that the poor people bear the heaviest burden, since they are able to buy only by pints at 7 cents, that is, at the rate of 14 cents a quart instead of 12 cents.

The Chicago City Club put on the witness stand Professor C. S. Duncan of the Department of Political Economy of the University of Chicago. Professor Duncan's testimony was to the effect that milk producers have been anything but losing money, that their accounting methods are faulty because they do not include all the profits which go into meeting the farmers' cost of living, and that in certain instances dairy farmers have refused \$225 an acre for the farms on which they assert they are losing money.

Five briefs were finally filed with the Commission, those for the consumer asking a price of 11 cents a quart delivered or 9 cents at the store.

The Commission was composed of: John S. Miller, chairman, a Chicago attorney; John W. O'Leary, at the time of the sittings president of the Chicago Chamber of Commerce; Lucius Teter, representing the social service forces; Mrs. E. P. Wells, for the women; John J. Fitzpatrick, for the distributors; John H. Harris, representing the interests of the processors; E. Davenport, dean of the College of Agriculture of the University of Illinois; P. G. Holden, representing the farmers other than dairy farmers, and chief of

the Extension Division of the International Harvester Company; and Willis J. Kittle, secretary of the Milk Producers' Association.

The last three submitted minority reports, disagreeing with the majority report. The four reports follow.

Majority Report.

Chicago, February 2, 1918.

Mr. Harry A. Wheeler,
Food Administrator State of Illinois,
Conway Building, Chicago.

Dear Sir:—The Commission appointed by you to conduct hearings and determine a price for milk in Chicago, based on cost of production and reasonable profit to the producer, cost of distribution and reasonable profit to the distributor, has held public hearings for a period from December 3, 1917, to January 31, 1918, inclusive.

The evidence presented by the producers, distributors, the City of Chicago, the State's Attorney, and the City Club, consisting of 5,874 pages of testimony, accompanies this report.

Two methods of determining the cost of production were offered in the proceedings: one based on a formula giving quantity and price of feed and labor and incidentals required for production of 100 pounds of milk; the second based on the price and quantity of butter fat contained in 100 pounds of milk.

The difficulty presented by the first method is due to inability to determine either cost of production or market price of *all* items of feed and quantities of each. There exists a variety of opinions on the amount of feed purchased and the value of home-grown feeds. The evidence offered by experts and farmers as to their cost of production by the application formula introduced by the producers showed wide variation of cost of production extending from \$2.05 to \$12 per hundredweight. This shows the impossibility of determining cost of production from such evidence.

The basis of determining cost of production by price of butter fat appears to concede that cost of production and profit is governed by market price of one of the products of milk, without regard to district in which the milk is produced or the cost of feed and labor entering into its production. For this reason the Commission sought a method of applying the evidence to overcome the objections outlined and of ascertaining a satisfactory base price representing normal cost of producing milk plus reasonable profit at the time taken and of ascertaining the increase to be added to reach such a price at the time here in question.

It would appear from the testimony that the dairy industry in the Chicago district had been a reasonably successful industry during a normal period of eight years preceding the war period. Lands had increased in value—improvements had occurred. The financial worth of those engaged in the industry had materially improved. That profits had not been excessive is indicated by the normal increase in supply to fill the demand. Because of the nature of the industry, had profits been excessive an over-supply would have followed; had they been unsatisfactory, a shortage would have been the result.

The Commission finds an unusual situation existing at the present time. This is a season of heavy surplus. The transportation congestion in the East and at the seaboard has made it difficult to ship condensed milk and other products which under ordinary conditions would absorb the surplus. Warehouses are already filled with these products awaiting transportation. Chicago has reduced its milk consumption, occasioning even greater surplus.

The Commission has therefore selected as a base, representing cost of production and a fair profit, the average sale price per hundredweight over the years 1908 to 1915 inclusive. The result, of course, does not represent present value, due to the large advance in cost of feed and labor since that time. The quantity of feed and labor per hundredweight of milk, however, is the same in both periods. Considering the eight-year period as a base and distributing feed and labor on a basis of 100 per cent total the Commission developed the following ratio:

	Per cent.
Home grown grains.....	19
Mill feeds (wheat, bran, wheat middlings, hominy, cotton seed meal, oil meal, gluten feed, dry salt).....	19
Hay (including silage valued at the ratio of 3 tons of silage to 1 ton of hay).....	35
Labor	27
	100

It was agreed by the Commission that variations in the prices of those four units represent with sufficient accuracy when applied according to the above ratio the increase or decrease in the cost of production of milk. The only criticism of this base or this plan made was by a minority of the members of the Commission, to the effect that the price to the producer during the eight-year period referred to was not satisfactory to them.

From the monthly price reports issued by the Department of Agriculture, the farm prices of home-grown grains and hay are obtainable, and from a reliable trade journal published in Milwaukee the wholesale prices of mill feeds are obtainable. The average over the eight-year period from these records is as follows:

Corn, per 100 pounds.....	\$1.107
Mill feeds, per 100 pounds.....	1.306
Hay, per 100 pounds.....	.557

It appears fair to the industry that it is entitled to the same proportionate increase in the price of its product as has occurred in the elements which make up the product. From the records of the Department for November, 1917, the beginning of the period under consideration, the following prices prevailed, obtained from the same sources:

Corn, per 100 pounds.....	\$3.089
Mill feeds, per 100 pounds.....	2.3655
Hay, per 100 pounds.....	.780

The Commission has considered from the evidence and such information as was obtainable that the price of labor in November represents a 50 per cent advance over the average for the eight-year period. Using the proportion of feed and labor and prices over the eight-year period, and comparing with November prices from the same source of information and on same products, we find the following ratio of increase:

	Basic index.	Eight-year period average.	November 1917 price.	Percentage increase November, 1917, over 8-year period.	New index.
Corn	19	\$1.107	\$3.089	179	53.01
Mill feeds.....	19	1.306	2.3655	81.1	34.41
Hay	35	.557	.780	40	49
Labor	27			50	40.50
	100				177

The average price of milk per hundredweight for the month of November from 1908 to 1915, inclusive, was \$1.768. Applying the new index ratio of 1.77, the November, 1917, price would be, therefore, \$3.13. In the same manner the price for any month may be determined by taking the average price over the eight-year period for that month and multiplying it by the index figure, 1.77. It will be noted that by the use of this method the ratio of the costs of feed and labor between the average of the eight-year period and the November, 1917, period is used rather than the actual prices of the commodities.

It has been the practice in the past, in an endeavor to avoid monthly changes of price to the consumer, for the producer and distributor to average their respective profits or losses over a period. The distributors' costs do not vary materially from month to month, while the producers' costs vary greatly.

During the period in which these hearings have been conducted the price of milk to the consumer has remained uniform, 12 cents, while the producer was receiving 7 cents and the distributor 5 cents. During May and June in the years past the distributor has received a larger proportion than the producer. While it is possible under the method suggested to obtain a price for each succeeding month on the basis of Department reports for preceding month, it appears desirable to the Commission, in view of past practice, that the price be fixed for each of the first six months of 1918.

The average monthly prices over the eight-year period were as follows:

Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
\$1.768	\$1.812	\$1.781	\$1.737	\$1.60	\$1.406	\$1.15	\$1.017

Applying the index 1.77 November price to these figures:

Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
\$3.13	\$3.20	\$3.15	\$3.07	\$2.83	\$2.49	\$2.04	\$1.80

It will be noted that the price arrived at under this method is:

	Nov.	Dec.	Jan.
Per hundredweight	\$3.13	\$3.20	\$3.15

Inasmuch as the above period has already passed and settlement has been made, the Commission recommends that the price of \$3.22 arranged by agreement between the U. S. Food

Administration, the Milk Producers' Association, and the Milk Distributors prevail for the months of November, December and January. The recommendation of the Commission, therefore, covering the eight-month period, for milk containing 3.5 per cent butter fat, delivered at dealers' country plants or shipping stations is as follows:

Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
\$3.22	\$3.22	\$3.22	\$3.07	\$2.83	\$2.49	\$2.04	\$1.80

.03 per hundred weight to be added or deducted for each 0.1 per cent butter fat variation from 3.5 per cent. The prices to the producer are based on 3.5 per cent butter fat with an additional price of 3 cents per hundred weight for each 0.1 per cent additional butter fat. The average test over the eighth-month period is 3.6 per cent, which adds 3 cents per hundred weight to the producer's prices. This difference the distributor is required to absorb, and the consumers receive the benefit.

Can shippers' Prices. Price for 8 gallons milk, f. o. b. Chicago:

Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
\$2.40	\$2.40	\$2.40	\$2.31	\$2.15	\$1.92	\$1.62	\$1.46

The Commission finds from the statements of the three largest and most efficient dealers that the average cost of distribution is 5¼ cents per quart. They contended for a profit of ½ cent per quart as reasonable, which would make their cost and profit 6¼ cents. The price hereafter recommended for retail bottled milk delivered will allow the dealer 6.1 cents per quart and for retail bottled milk, on cash and carry plan from dealers' stations, 4.1 cents per quart.

The Commission recommends that the price of bottled milk, delivered to the consumer, for the months of February, March, April, May and June be 12 cents per quart—7 cents per pint.

The Commission recommends that the price of bottled milk at each of the distributors' stations in Chicago (of which there are approximately 700) be 10 cents per quart, with a deposit of 5 cents for bottle or the exchange of an empty bottle of the same dealer; such sales to be on the cash and carry plan.

Statements of the cost of handling the milk from the producer until it reaches the consumer were presented by a number of distributors. A number of these were accompanied by detailed audited statements of costs which indicated the present cost for the service rendered, including pasteurization, bottling, freight, loss and breakage of bottles and delivery to the customer from January to December, 1917.

These reports clearly indicated that advance in prices to the consumer resulted in materially decreased consumption which automatically increased the cost. The evidence shows that approximately one-half of the amount which the distributor receives for his service is represented by requirements of health, washing and sterilization of bottles, pasteurizing, bottling and freight. The balance of the cost is represented by actual delivery. It appears to the Commission that methods may be devised by which this element of delivery may be reduced. Various economies are already being tried in other cities. We recommend that continued study and experiments be made, and that the distributors and consumers co-operate toward that end.

The Commission recommends that the Department of Health, social service organizations and public press make every effort to inform the public on the high food value and economy of milk as a food product. Convincing proof was introduced before the Commission of the importance of milk as food for growing children. Larger consumption of milk in Chicago will mean lower distributing costs, better opportunity for the producer, and a material improvement in health of our city.

The Commission is impressed from the testimony with the fact that there is opportunity for improvement and lower cost on the part of both producer and distributor. Low production is not profitable to the farmer and not equitable to the consumer. Every effort should be made to encourage the elimination of low-producing cows and the gradual improvement of the herds.

The Commission recommends further co-operation on the part of the producers in hauling milk to the stations so as to bring about a reduction in their cost.

There is also need for improved methods of distribution. Unification should be effected as rapidly as possible. The Commission believes that overlapping deliveries and un-economic methods result in expenses which the consumer should not be called upon to assume. An immediate step should be taken to eliminate these factors of cost.

The evidence indicates that the consumer is also responsi-

ble for some needless cost. A large item of expense which the distributor must, necessarily, put in as cost, is due to the failure of the consumer to realize his responsibility in the return and care of bottles. It is important that the consumer return daily empty bottles cleaned in accordance with the city ordinance now in effect.

Similarly, unreasonable demands make it difficult to effect economies that otherwise might be accomplished. If every consumer insisted upon having milk delivered within the same hour, the cost of distribution would materially increase. Unless the consumer co-operates with the distributors, efforts designed to bring about economies will not give the desired results.

Surplus milk is an item of expense which the distributor now carries. Under present methods the distributor must purchase from the producer all of the milk offered regardless of the demand of the consumer. The surplus is manufactured by the distributor into products which usually represent a loss. To transfer the burden of caring for this surplus to the producers would not in our belief affect the price to the consumer. A desirable solution of this problem could be accomplished by regulating the herds to a more uniform production.

It is interesting to note the following percentage of distribution of increase in price of milk in Chicago between the average eight-year period and the present eight-month period over which this price is fixed. It will be noted from this that the increase which the producer received amounted to 78.4 per cent. The increase which the distributor received amounted to 35.8 per cent and the increase to the consumer amounted to 52.8 per cent.

PRICE PAID TO PRODUCERS BY DISTRIBUTORS PERIOD NOVEMBER 1 TO JULY 1.

	1908-1915.	1916-1917.	1917-1918.
Per hundredweight	\$1.5333	\$2.0125	\$2.736+
Per cent increase over eight-year period.	31.1+		78.4

PRICE PAID BY CONSUMERS FOR BOTTLED PASTEURIZED MILK DELIVERED PERIOD NOVEMBER 1 TO JULY 1.

	1908-1915	1916-1917	1917-1918
Per quart	.07585	.0937	12.
Per cent increase over eight-year period.		19.37	52.8+

PER QUART MARGIN FOR DISTRIBUTION EXPENSE AND PROFIT.

	1908-1915.	1916-1917.	1917-1918.
	.0454	.05044	.0611+

The Commission finds that the respective prices of milk to be paid to the producers as hereinbefore set forth, cover the cost of production and a reasonable profit, and that the respective prices of milk to be paid by consumers to the dealers in Chicago as hereinbefore set forth, cover the cost of such dealers and a reasonable profit.

The formula or method of arriving at the prices of milk covering the cost and a reasonable profit was adopted by the unanimous vote of the Commission. In view of the difficulty of ascertaining the actual cost of producing milk, the Commission is of the opinion that the method here resorted to offers a ready method of ascertaining the price of milk which very closely covers cost and a reasonable profit at any time.

Upon the motion to adopt and recommend the prices of milk to be paid to the producers as hereinbefore set forth Messrs. Kittle and Holden voted "no"; Dean Davenport, at his request, was recorded as "not voting," although approving the Commission's findings as a wise one, and the other members voted "aye."

Upon the motion to adopt and recommend the prices to the consumer, as above set forth, Messrs. Kittle and Holden voted "no"; Dean Davenport was absent; and the other members voted "aye."

Instead of signing this report, Dean Davenport, Professor Holden and Mr. Kittle submit herewith minority reports.

Respectfully submitted,
(Signed) JOHN S. MILLER,
JOHN W. O'LEARY,
LUCIUS TETER,
MRS. E. P. WELLS,
JOHN J. FITZPATRICK,
JOHN H. HARRIS,

Minority Reports.

Chicago, Ill., February 1, 1918.

John S. Miller, Chairman,
Chicago Milk Commission,
Chicago, Ill.

My Dear Sir:—I desire to be recorded as "not voting" upon the scale of prices adopted by the Commission. I believe,

however, that all things considered, the finding is a wise one and I desire to support it by all available reasons. In order to be able to do this I have submitted the following independent statement which I will ask also to have incorporated into the records of the Commission:

"Mr. Harry A. Wheeler,
"Food Administration,
"Chicago, Ill.

"My Dear Sir:—Because I desire to support the findings of the Milk Commission with all available arguments and reasons, because I shall at once have this duty laid upon me under many and difficult situations, and because the Commission was unwilling to incorporate into its report certain suggestions offered to that end, I beg to submit in my own behalf the following supplementary statement:

"Chicago is unwilling at this time to consume a normal amount of milk at a price which will with certainty return the cost of production and a reasonable profit when made in full amount and under the present and prospective conditions of extreme high prices of feedingstuffs. This fact, together with the feed scarcity and the congested conditions of transportation which make the raising of dairy products both difficult and uncertain, creates a condition in which it seems that to invite free and unrestricted output would most likely precipitate a situation entailing great losses both upon the producer and the distributor.

"The finding of the Commission, therefore, means not a stimulating price, but, rather, a conservative one calling for a substantial but reasonable reduction, and dairymen are advised to effect such temporary adjustment, not by going out of business, but by reducing the herds through the disposal of aged cows and poor producers, effecting thereby a substantial saving of food for younger and better animals and thus avoiding over-production at a time of unusual scarcity in feeding stuffs. A moderate rather than an excessive ration is also recommended and for the same reason."

Respectfully submitted,

E. DAVENPORT,
Dean College of Agriculture, University of Illinois, Member
of the Commission.

Chicago, Ill., February 2, 1918.

To the Chairman of the Milk Commission:

I wish at this time to make a brief statement regarding my relation to the majority report submitted by the Commission of which you are Chairman.

I cannot concur in the report submitted by the majority of the Commission, as I am convinced that the scale of prices fixed for the producer is much too low and will either work a great hardship to him, or will constrain him to curtail his production to such an extent that Chicago's milk supply will be seriously imperiled.

It is my understanding that the Commission was appointed to fix a scale of prices to the producer based on the cost of production plus a fair profit, and a price to the distributor based on cost of distribution plus a fair profit. In my judgment, the Commission has fixed a price to the producer which does not even cover the cost of production, let alone a fair profit.

I shall submit at a later date a dissenting report, stating more at length my reasons for differing with the majority of the Commission.

(Signed) P. G. HOLDEN,
Member of the Milk Commission.

In the Matter of the Milk Inquiry:

I cannot concur in the report of the majority of this Commission regarding the price of milk for the following reasons:

1. The majority of the Commission, in arriving at its findings, has ignored the testimony given by the professors of the University of Illinois and of Cornell University, New York, as well as the methods of determining values adopted by the agricultural colleges of all the state universities in the country and by the Department of Agriculture of the federal Government.

The majority of the Commission has likewise ignored the testimony of all the farmers who kept accurate accounts of their actual expenditures, both as to the amount of feeds fed by them and their cost, and has ignored also the testimony given by the representative of the U. S. Department of Agriculture sent to the Commission by Hon. David F. Houston, secretary of agriculture, at the request of the State's Attorney, the City Health Department, and the Chicago City Club.

2. Neither the Commission, nor anyone who appeared before the Commission, has presented any statement or evi-

dence to contradict the sworn testimony of the numerous farmers who appeared before the Commission as to the actual cost of milk production, nor has a producer of milk appeared who has given any different testimony.

The majority of the Commission, having determined to ignore all of this testimony, has adopted, as was stated by one of its members, a formula of its own outside of the evidence, which has been expressed in the following terms:

Twenty pounds of home-grown grain, 24 pounds of purchased grain, 110 pounds of hay, 3 hours of man labor, to produce 100 pounds of milk.

Having adopted this formula, the majority of the Commission has also refused to apply to it the market prices of feeds. On the contrary, the majority of the Commission has devised a plan for finding the average cost of feeds and the average cost of milk from the year 1908 to the year 1915 inclusive, and then ascertaining the general rise of prices between 1915 and 1918, and having found this average has endeavored thereby to arrive at the actual cost of milk production by applying the formula and ignoring actual market prices.

The dairymen submitted their case under an agreement that they should receive their actual cost of production with a reasonable profit. The Commission has given them a theoretical cost of production which no one can resolve into the elements of actual cost, profit or loss; and which, moreover, is below the actual cost of feeds in the market even as shown by the formula adopted by the Commission.

The only testimony on the part of the distributors as to the methods pursued by them before April, 1916, in fixing the price of milk is the testimony of the superintendent of the Elgin branch of Borden's Condensed Milk Company, who stated that it was the practice of his distributing company to have the superintendents make inquiry about the prosperity or lack of it among the dairy farmers and then to meet in New York City and there fix the price for the dairymen's milk upon the general prosperity or lack of it among the farmers as observed by the superintendents, and without any investigation of or regard to the cost of milk production; in other words to fix it upon "what the traffic would bear."

This fixing of prices without any consultation with the farmers, brought them so many hardships that it led to their forming an organization to prevent a continuance of this arbitrary fixing of prices and terms of sale by the distributors. Under such conditions, this was found necessary, not only to preserve the herd of the individual farmer but to preserve the milk industry in the entire dairy district which serves the City of Chicago itself. The average of eight years adopted by the majority of the Commission covers those intolerable years of struggle with the distributors and its application causes the Federal Government to prolong those bad conditions in the settlement of this controversy.

3. In contrast with the ignoring by the majority of the Commission of the testimony of university professors, dairy farmers and the representative of the Department of Agriculture, is the ready acceptance by the majority of the summaries of financial condition submitted by the milk distributors and of the price which they suggested as a reasonable charge for distributing milk.

4. The majority of the Commission in fixing the price of milk fixed the maximum to be charged to the consumer at the arbitrary price of 12 cents per quart. The majority of the Commission then accepted fully the testimony of the distributors and granted them all they asked. It gave to the farmer what was left. It is manifest that this reversed the methods that were recommended to this Commission, and the natural order which should have been followed in such an investigation, viz.: to find the cost of production to the producer plus a reasonable profit thereon, and the cost of distribution to the distributor and a fair profit thereon, and declare their sum to represent the price to the consumer.

It is my judgment that the findings of this Commission should have been based upon the evidence submitted to the Commission. If the Commission intended to ignore the testimony which occupied weeks in submission, the Commission in the beginning, instead of hearing witnesses, should have submitted its own formula for determining the cost of milk production and the theories upon which it was based, and have invited the parties in interest to offer testimony regarding its validity. The method pursued by the majority of the Commission has denied to the dairy farmers in effect, the right to a hearing.

Not only can I not concur in the findings of the majority of the Commission, but I am constrained to enter my earnest protest against the methods pursued in reaching them. The dairymen have submitted all the facts regarding their busi-

ness to the Commission, and in view of the fact that no effort has been made to meet their evidence or to controvert the facts submitted in their behalf, their evidence should not have been ignored.

Very respectfully,

(Signed)

W. J. KITTLE.

The findings of the Commission aroused a great deal of opposition and resulted in what was for a time practically a boycott of the Chicago market by the farmers. The situation became so serious that Food Administrator Wheeler asked Mr. Hoover to send to Chicago two members of the Federal Food Administration, Dr. Charles E. McNulty of Wisconsin and W. E. Lamb, a Chicago attorney, to sit with him as mediators in a new inquiry reopening the whole basic price question. This was to be the final settlement, Mr. Wheeler announced, beyond which there would be no appeal.

On February 19, the Commission again went into session, without, however, the presence of Dean Davenport. An open letter addressed to Mr. Wheeler on the 18th explained Dean Davenport's refusal to sit further with the Commission. After reviewing their findings with Mr. Lamb and Mr. Wheeler, the Commission revised their previous ruling and set the price to be paid the farmers at \$3.10 per hundredweight, the retail cost per quart to remain 12 cents.

The gist of Dean Davenport's letter of protest follows:

I was deeply disappointed in the work of the Commission, and, with one important exception, disagreed with the conclusion of the majority as likely to do more harm than good. However, from a desire not to embarrass the Food Administration by divided counsels in time of war, I felt bound to confine my minority communication of February 1 to a discussion of the only conditions under which the report of the majority could be justified.

This Commission was appointed to render a distinct and much needed service to the public in time of agitation and distress. That service could have been rendered had the Commission adhered to its instructions, which were to ascertain what is the cost of producing milk in the Chicago district under present conditions and what constitutes a reasonable profit. That information was obtained and could have been given.

However, the Commission named a series of prices to be paid the producers month by month which, instead of solving the difficulties, made them worse, as was inevitable, because the prices named carried no profit to the producer, nor were they accompanied by adequate reasons for departing from instructions.

The great factors of cost in milk production are feed and labor. By assigning current values to these items for any particular season, the cost of producing milk on the farms in question during that year may be accurately determined. For example, assuming what is approximately true—that in general equal parts of grain are bought and raised—and taking conservative prices, the yearly cost of milk would be as follows, counting silage according to the ordinary rule at one-third the value of mixed hay:

Cost of Producing 100 Pounds of Milk Having 3.5 Per Cent Butter Fat.

22 lbs. Farm-grown grain	at \$40 per ton.....	\$0.44
22 lbs. Bought grain	at \$50 per ton.....	0.55
50 lbs. Mixed hay	at \$18 per ton.....	0.45
188 lbs. Silage	at \$6 per ton.....	0.564
39 lbs. Roughage	at \$4 per ton.....	0.078
2.42 hrs Labor	at 25c per hr.....	0.605
Total		\$2.6870
Profit, 10 per cent.....		.2687
		<hr/> \$2.9557

Ten per cent is added as profit for the reason that it is to be assumed that a farmer operates a dairy for some reason other than barely marketing his feed and labor. The profit indicated is approximately \$150 a year for a herd of ten ordinary cows, and is in lieu of compensation for managerial

ability, which manifestly should be somewhat in excess of the \$0.25 an hour allowed for common labor.

If the figure \$2.9557 (\$2.96) be taken as representing the cost of producing 100 pounds of milk with a 10 per cent profit, it must be understood as the *average cost for the year*. Experience has shown that this price must be somewhat unevenly distributed throughout the year in order to make production fit consumption. Therefore, in order to determine what should be paid the producer during the different months of the year, this average should be "spread" over the twelve months according to the rates which experience has established. For example, the Chicago markets as an average for ten years have paid 120.2 per cent of the average year-price for December and only 70.6 per cent of that average for June, with other months distributed between. Such distribution would stand as follows:

Distribution of \$2.96.

Month.	Factor, Per Cent.	Price.
November	118.3	\$3.50
December	120.3	3.56
January	119.0	3.52
February	114.3	3.38
March	106.5	3.15
April	94.2	2.78
May	73.2	2.16
June	70.6	2.09
July	83.7	2.47
August	94.2	2.78
September	96.7	2.86
October	109.2	3.23
	12)1200.2	12)\$35.48
	100	\$ 2.96

Of the feeds entering into the production of milk, the average values for the year 1917 and for the month of January, 1917 and 1918, are as follows:

	Av. 1917.	Jan., 1917.	Jan., 1918.
Corn, Wisconsin farm values, per bu...	\$ 1.41	\$.90	\$ 1.59
Hay, Wisconsin farm values, per ton...	13.73	11.40	20.70
Mill feed, wholesale, per ton.....	45.25	38.31	49.76

Wisconsin prices are taken for corn and hay as being typical of the Chicago milk-producing region. The mill feeds are quoted at wholesale carload lots in Milwaukee. To these in practice must be added the expense of retail and the cost of hauling to the farms.

Considering the upward trend in prices when the two Januaries are compared, the scarcity of feed over the country, and the fact that from now on farmers must buy large amounts not only of grain but of hay as well, the prices taken in the computation are justified, though, if beside the fact at all, they are likely to operate against the producer during the months that must intervene before new crops can be gathered.

The figure of \$0.25 an hour for labor means \$45 a month, with \$20 for maintenance. Of course, the variation of from \$3.56 in December to \$2.09 in June due to the "spread" allows for the considerable fluctuations in the amounts of expensive feeds consumed during the summer months as contrasted with the larger amounts and higher prices prevailing during the winter months for the same feeds.

States other than Illinois have studied the cost of producing milk by methods quite the same. The amounts of grain are practically identical but in every case a larger labor charge is involved and a more costly milk indicated.

In Massachusetts the cost of producing 100 pounds of milk, arrived at by the same method, is \$3.1768, nothing being included for keep of bull and nothing for depreciation. In New York, for milk having 4 per cent butterfat, the cost is \$3.131. The average figure for 482 Connecticut, Massachusetts, New Jersey, New York and Michigan farms is \$3.06.

In my judgment, for the district and the period in question, \$2.96, as the yearly average, is a figure around which the actual cost of milk production, with a reasonable profit, fluctuates with a comparatively narrow margin. I offer it, therefore, as a substantial answer to the first question submitted to the Commission.

When the Commission was appointed, a temporary price to the producer of \$3.22 was agreed upon for November and December, with the understanding that if the Commission found a cost of production plus a reasonable profit that exceeded \$3.22, the difference should be spread upon the monthly prices up to and including June. The report of the Commission was delayed until February 1, so that the month of

January becomes a part of the original agreement.

Under this agreement the losses to be made good for these three months were as follows:

Month.	Cost and Profit.	Price Paid.	Loss.
November	\$ 3.50	\$3.22	\$0.28
December	3.66	3.22	.34
January	3.52	3.22	.30
	\$10.58	\$9.66	\$0.92

This total loss of \$0.92 spread over the five succeeding months equals \$0.18 per hundred to be added to the regular price for each month, as follows:

Month.	Cost and Profit.	Loss Spread.	Price.
February	\$ 3.38	\$0.18	\$3.56
March	3.15	.18	3.33
April	2.78	.18	2.96
May	2.16	.18	2.34
June	2.09	.18	2.27
	5)\$13.56		5)\$14.46
	\$ 2.71		\$ 2.89

This would mean an average of 6.3 cents per quart to the producer for the next five months, as compared with 6.5 cents indicated by the \$2.96 yearly average. That is to say, to carry this load of loss would put no special hardship upon the consumer at this particular time as compared with usual conditions.

If to this figure the Commission had added the cost of distribution plus a reasonable profit, it would have arrived at a figure for which milk should sell in Chicago from February 1 to June 30 in order to pay costs of production and distribution with reasonable profits. This would have probably meant 13-cent milk for Chicago.

The market conditions in Chicago at this time could not be worse.

It is the season of the surplus, which for nine months of the year becomes a burden upon the distributor. Ordinarily he works this surplus into condensed milk and his loss is nominal. But the market movement of condensed milk has been stopped for weeks. The warehouses are filled. There is a limit not only to storage but also to the bank credit available to the condenseries, and it was represented to the Commission by those who know, that both are practically exhausted; indeed, some companies are already refusing to buy further stocks.

The only other possible disposition of the surplus is to make it into butter. But here it comes into open competition not only with ordinary summer milk but also with much that is in truth a by-product of general farming, and the inevitable result is a loss of approximately a dollar a hundred to the distributor. No company can stand this long, and since the Commission has been sitting, many distributing companies have failed in business, among them the third largest company in the city of New York.

But most of all, the Chicago milk consumer is mad at milk. When it went from 10 to 13 cents a quart, he cut off one-fourth of his consumption, increasing thereby the overhead charges on distribution. Even now that it has dropped back to 12 cents he still consumes about 16 per cent below normal.

The buying power of Chicago has been injured for an indefinite period because the consumer has been led to believe by the press and by public officials that he is the victim of a conspiracy, and that if he had his rights he could buy 9-cent milk at a depot or have it delivered at 11.

What the Commission should have done under conditions such as these is to have reported the cost of producing and distributing milk, with a reasonable profit in both cases, just as it was appointed to do; submitted a statement of the demoralized market conditions; and recommended that the Food Administration make some adjustment with the producers and consumers until such time as wiser councils may prevail and normal conditions be restored.

I must with regret express the conviction that my own opinions and information and those of other agricultural college men and of the producers counted but lightly in the councils of the Commission. The majority proceeded from the assumption that Chicago must have 12-cent milk. Upon that point I obtained a clear expression of intention. This procedure, in my opinion, violated both the instructions and the authority of the Commission.

However, the majority did one good piece of work, and to this I gladly give support. It expressed the conviction that *the price of milk to the producer should rise and fall in direct proportion to the changes in the cost of feed and labor*, and

it developed a formula that will with very great accuracy express that rise and fall and, if properly used upon an adequate base, determine the price of milk for any desired period.

If such a formula can be fully perfected and *properly applied*, it will automatically remove from the field of contention one of the most troublesome of all our food problems and one of the most violent causes of discord between the producer and the consumer, who, after all, are mutually dependent.

Manifestly, in the operations of a formula that works by percentages, if anything is wrong with the *base* that error will be projected into and through the calculations and will with certainty appear in the results. For example, if the base price carried "a reasonable profit," that profit would be preserved in the computations. If, on the contrary, the base price represented a loss, that loss would unerringly appear.

The Commission took as a base the average of the prices prevailing during the period 1908-1915, the last before serious war disturbances. It was assumed that inasmuch as the city was supplied with milk during that period and under those prices, the prices must have been satisfactory.

This assumption is unwarranted, because it was during that

very period that dissatisfaction became acute. Hence the increased activity of the Milk Producers' Association. Manifestly, in any event, the base price adopted needs careful scanning and possibly some correction.

As a matter of fact, the direct results derived from the formula as laid upon the uncorrected base *carry no profits*, as can be shown by filling in the formula with the current prices, as already computed, and showing that the results produced by the new formula *as it was used*, very closely approximate the cost of production without a profit.

The base price must be so raised by 10 per cent as to carry a reasonable profit, after which the formula may be trusted, but without this it becomes an automatic device to beat the producer.

Having regard to the present high cost of producing milk and the demoralized market conditions both as to shipping and as to consumption, but three possible means of relief suggest themselves: first, to move some portion at least of the heavy stocks on hand, particularly of condensed milk; second, to institute if possible the influences which will restore normal consumption in Chicago; or third, to advise producers to somewhat reduce the output.

Egg Dealers Fined Under Illinois Law.

Following the first convictions of Chicago retail merchants for failure to indicate storage goods by label or placard, Superintendent Newman of the Illinois Division of Foods and Dairies, has launched a new drive to enforce the provisions of the Illinois cold storage law. Fifty-three new cases for prosecution have been turned over to the Assistant Attorney General. These are in addition to thirty cases now pending. Inspectors have been assigned to collect evidence against storage concerns as well as the retailers.

The first five cases in Chicago were taken before Judge Gemmill in the Municipal Court. Three of the defendants were fined, one case was continued and one was set for jury trial. Eggs were the product concerned in each instance.

Egg Substitutes in Tennessee.

February 1, 1918.

DECISION No. 519-A.

Taking effect this date, all substitutes sold in the State of Tennessee, either at wholesale or retail, to consumer or jobber, must comply with the Food and Drugs Law of Tennessee, and be labeled as required by this ruling, as follows:

1. No substitute shall bear a name containing the word "egg," unless such substitute contains 51 per cent of whole egg.
2. No substitute shall contain an artificial coloring not certified by the U. S. Department of Agriculture, and if artificial coloring is used, it must be plainly stated on label.
3. Egg substitutes shall not contain any preservative other than benzoate of soda and not more than one-tenth of 1 per cent of the same.
4. No label on such substitute shall bear any statement on comparative value unless same can be qualified by contents for which the label is used.
5. Each package must be distinctly labeled with the name of the product and the name and address of the manufacturer.
6. No diseased, decomposed, putrid, infected, tainted, rotten animal or vegetable substance or article whether manufactured or not or the product of any diseased animal shall be used in the manufacture of such substitutes. Nor shall the use of any substances poisonous or injurious to health be permitted in the manufacture of such substitutes.

7. No label of such substitute shall bear any statement, design or device that is false or misleading in any particular.

HARRY L. ESKEW, Commissioner.

Michigan Dairy and Food Department Ruling On Sale of So-Called Egg Substitutes.

Section 3 of Act 193 of the Michigan Public Acts of 1895 is as follows:

"An article shall be deemed to be adulterated within the meaning of this act * * * (Fifth) if it is colored, coated, polished, bleached or powdered whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is."

Now, by virtue of the authority vested in me as Dairy and Food Commissioner, under the Provisions of Act 344, Public Acts of Michigan, 1917, it is hereby held:

First, That the use of artificial color in so-called egg substitutes is for the purpose of making the said substitutes appear better or of greater value than they really are, that the practice is in conflict with the provisions of the fifth subdivision of Section 3 of Act No. 193 as heretofore cited, and is therefore illegal. The use of artificial color in these preparations is prohibited.

Second, It is further held that the preparations in question when not made up entirely of powdered whole eggs, are mixtures and compounds within the meaning of Michigan's Food Law and as such must be labeled under a distinctive or coined name, the word "egg" not to be used in the makeup or to appear in the coined or distinctive name given the product.

This ruling will take effect April 15th and wholesalers and retailers will be given until that date to close out stocks now on hand and which are not in conformity with the provisions of this regulation.

In Witness Whereof, I have hereunto set my hand and affixed the official seal of the Department this fifth day of February, nineteen hundred eighteen.

(Signed) FRED L. WOODWORTH.

State Dairy and Food Commissioner.

Kansas Also After Egg Substitutes.

The food authorities of Kansas are preparing to issue new orders relative to the sale of egg substitutes, similar to the regulations now in force in Ohio, which requires that the word "Egg" may not be used as any part of the name, or as a syllable in the name of a product intended as a substitute for eggs, and also that no artificial coloring matter may be used.

Adjusting America's Liquid Milk Supply to Suit Seasonal Demands

By ROBERT G. SOULE

THE problem of supply and demand is one of the most important confronting the many people interested in supplying the millions of people residing in the cities of America with dairy products. This problem has been made simpler for manufacturers and dealers in butter and cheese by the development of the great systems of cold storage warehouses, but the distributors and producers of liquid milk and cream have not heretofore been able to make use of this system for carrying surplus milk and cream produced during periods of the greatest production over for use during periods of scant production and subsequent shortage.

This has been due to the nature of the products themselves, the expense of storage and the great danger of tremendous losses due to deterioration. Liquid milk consists of approximately 87 per cent water and the balance butter-fat and solids-not-fat. It would be indeed, an expensive operation to freeze such an article for storage. It is evident that any saving realized in the initial cost of the raw surplus product would be overcome by the storage charge. Many of our largest ice cream manufacturers have been successfully placing frozen liquid cream in storage during the months of April, May and June, and using it in the following October, November and December, but this has one great disadvantage. An ice cream manufacturer cannot foresee the weather conditions he is to encounter and often places more frozen cream in storage than he needs. It is impossible for him to sell this product on the market and so he must carry it over to the next season and lose the advantage in cost on which he had figured.

Thus we are confronted with the problem: how can we preserve the liquid milk supply during surplus periods so that it will not undergo any chemical change but will be the same when we are ready to use it during periods of shortage? Condensing or evaporating does not solve the problem. Condensed milk containing sugar differs in taste, composition and food value from natural cow's milk. Evaporated milk is sterilized by great heat and is thus changed in flavor and nutritive value from normal cow's milk. When reconstituted in water, powdered whole milk resembles cow's milk in nutritive value but differs slightly in flavor and will not keep indefinitely.

The Solution.

During the last four months there have been given at different places in the United States a number of

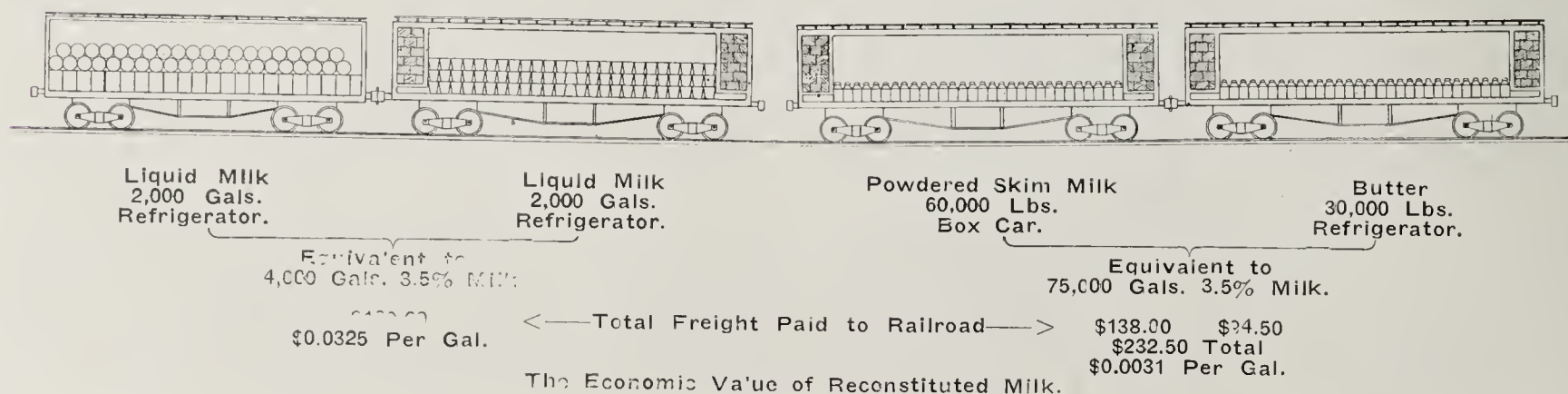
very interesting demonstrations of a process which seems to solve the problem we are facing and has, as well, many other advantages to commend it. This process, conceived and developed some years ago, has now been brought to such a state of perfection that it may truly be said to be the final and conclusive answer to the milk distribution question. Brought before the nation's dairy authorities and the leaders in the milk and ice cream business, it has received their enthusiastic endorsement, and its universal use seems to be only a matter of time. Many large milk and cream users and ice cream makers throughout the United States and Canada are employing the process and by it overcoming most satisfactorily the difficulties attendant on the varying supply.

At the 1917 National Dairy Show, at Columbus, Ohio, the process was exhibited jointly by the De Laval Separator Company of New York City and the Merrell-Soule Company of Syracuse, N. Y., and it proved to be the center of attraction. The feasibility of this process, which embodies a machine called an "emulsor," developed by The De Laval Separator Company, makers of the first centrifugal cream separator, lies in the fact that it makes use of butter and powdered skimmed milk—materials very easily shipped and stored—in the production of normal milk or cream of any desired butter-fat and solids content.

Please note the emphasis on the word *normal*, for it is this property of the product which gives the development of this process its significance. Emulsified milk or cream is "manufactured" in no sense, except that a mechanical process is used to combine the component parts in exactly the same proportions as in natural milk.

How the Emulsor Was Developed.

The story of the development of the Emulsor is interesting. One of the De Laval Company's engineers some years ago reasoned that if it were possible to separate centrifugally the component parts of milk, why could not a centrifugal machine be developed that would reassemble these parts in their natural condition and proportions—that would produce normal or reconstituted milk or cream? His experiments and those of his associate engineers resulted in the introduction of the De Laval Emulsor, a machine which simply reverses the process of separation, producing cream which is in every respect the same as that separated from natural milk—a product which has the same food value and may be used for the same pur-



poses as natural cream. Emulsified milk is chemically the same as the natural product, tastes the same and is just as nourishing.

In short, a cream or milk user or ice cream manufacturer equipped with a De Laval Emulsor and supplied with sweet or salted butter and powdered milk and water has the equivalent of a dairy herd right in his own plant. Moreover, the milk or cream thus produced has a better flavor, is cleaner than the average natural product and has the further advantage of being properly pasteurized incidental to emulsification. The cream whips and swells in ice cream-making exactly as does natural cream, and, by reason of its more uniform consistency, produces a smoother and more even textured ice cream than can ordinarily be made from natural cream.

As one commentator said not long ago, "the De Laval Emulsor brings the dairy herd to town."

How the Emulsor Does Its Work.

The De Laval Emulsor is a machine of the pedestal type, about three feet high, and with base measurements of about 16 by 18 inches. The frame is oval-shaped and its upper part supports a bowl, or emulsifier, which revolves at a speed sufficiently high to produce instantly the emulsion of the component parts of the milk.

The emulsifier consists of a series of chambered steel discs or plates mounted one upon another around a central feed shaft, the construction being such that when these plates are drawn together they do not fit quite tight at their circumference, but there is left between them a very small clearance forming a circumferential orifice less than the thickness of a thin

during the pasteurizing and emulsing operations, and a surface cooler for the purpose of cooling the emulsified milk or cream immediately. A smaller Emulsor is also manufactured with a capacity of 25 gallons per hour.

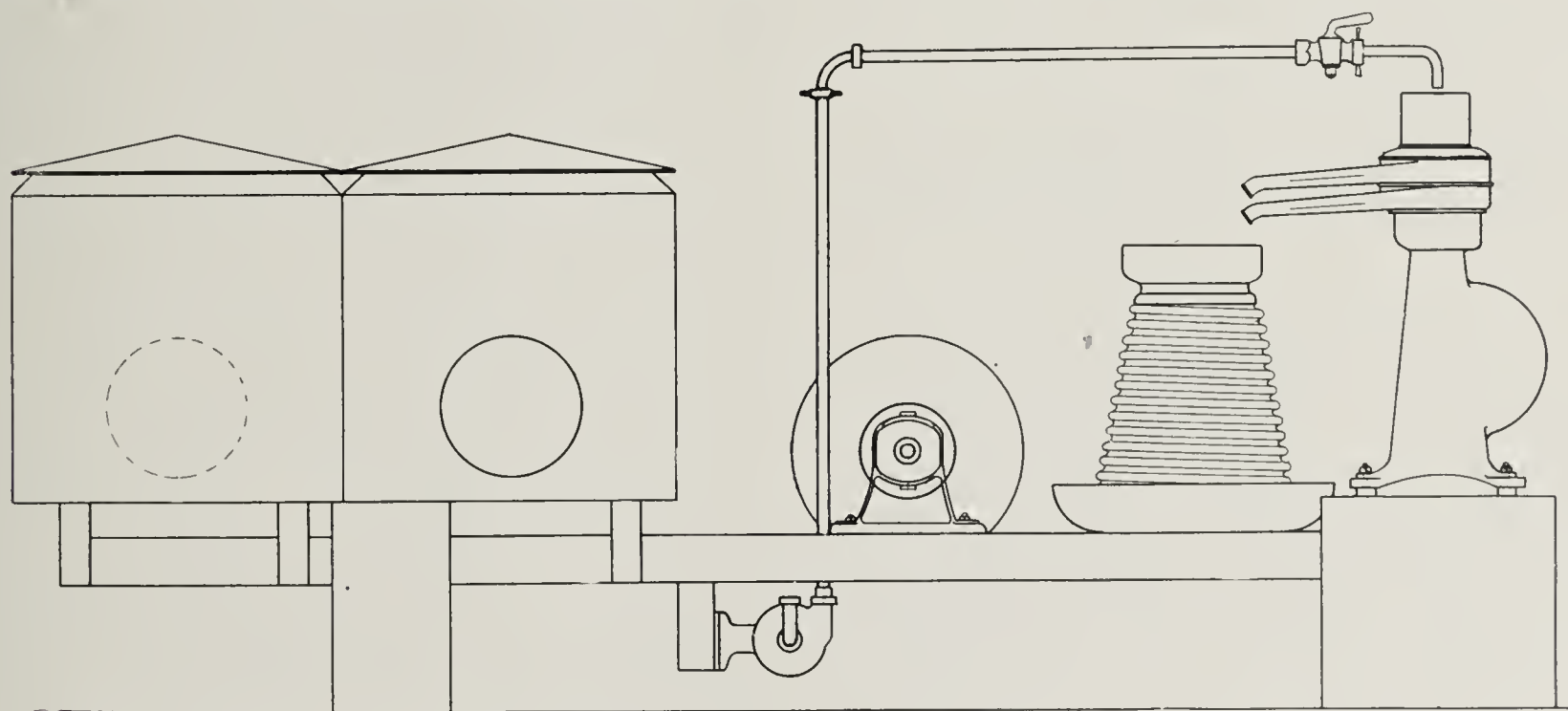
Product Properly Pasteurized.

The ingredients, after being properly pasteurized at a temperature of from 62° to 75° Centigrade (145° to 168° Fahrenheit), pass into the emulsifier, which throws them off in the form of a fine mist into the cover of the machine. Thence they are discharged over the surface cooler, which eliminates the air that has been incorporated during emulsification at the pasteurizing temperature. In this way any objectionable gases are removed and the flavor of the product greatly improved.

So much for the process of bringing the component parts of milk back to their normal state. Let us now turn to these component parts. As in the case of any other food, the better the quality of the ingredients used, the better will be the quality of the milk or cream. It is impossible to make first quality cream from poor materials.

Wherever possible, unsalted butter should be used, as this eliminates the necessity of washing the butter-fat in order to remove the salt. During the last few years the art of butter-making has developed so that unsalted butter can now be manufactured and stored with as great safety as salt butter.

The powdered skimmed milk used in this process must necessarily be perfectly soluble and be manufactured from sweet skimmed milk of high quality. It must be of such a nature that when it is dissolved



sheet of paper, through which the product emulsified between the discs is discharged.

The lower part of the emulsifier consists of a clarifying chamber, where the liquid is clarified by centrifugal pressure before the actual work of emulsifying begins. In this chamber even the finest particles of sediment are removed and retained.

In connection with the Emulsor, a mixing tank and cooler are used. The illustration shows a complete unit, comprising an Emulsor capable of producing 200 gallons of milk per hour, two 110-gallon mixing tanks equipped with suitable agitators to dissolve the powdered milk and butter and to keep the mix agitated

in water and emulsified with the unsalted butter, the resulting milk or cream will not have a cooked or disagreeable flavor due to high heat being applied during the process of the manufacture of the powder. The patented Spray Process owned by the Merrell-Soule Company produces a powdered skimmed milk admirably suited for this purpose. The process is being employed extensively by that company and many of the large milk distributors, condenseries and creameries which have been granted licenses by the owners of the patents. Powdered skimmed milk consists of 95 per cent milk solids-not-fat, approximately 2 per cent butter-fat and 3 per cent moisture. It is the most

highly concentrated form of milk produced, and will keep indefinitely in dry, cool storage. Cold storage is not necessary.

Combinations That May Be Used.

An excellent quality of milk or cream may be made from any of the following combinations:

Skimmed milk powder—water—butter (preferably uncolored and unsalted).

Whole milk powder—water—butter.

Skimmed milk—skimmed milk powder—butter.

In making cream for the ice cream "mix" any of the following combinations may be used:

Condensed skim milk—water—butter.

Condensed whole milk—water—butter.

Skimmed milk—condensed skimmed milk—butter.

Whole milk—condensed skimmed milk—butter.

Economical for Use in Hotels and Apartment Houses.

It would be a very simple matter to install a small emulsifying plant capable of taking care of the milk requirements in each apartment, tenement, restaurant, and even grocery where milk is now being sold or consumed. Let us take, for example, an apartment house in which 40 one-quart bottles of milk and 20 half-pint bottles of cream are being delivered daily by several different milk dealers and contrast the neces-



150 QTS. MILK
318 LB'S

13.3 LB'S BUTTER
29 LB'S POWDERED SKIM MILK
42.3 LB'S TOTAL

CITY DELIVERY COMPARISON

sary energy and expense involved in getting this milk and cream to the different families in the apartment under the present system and by the employment of the Emulsor.

A small emulsifying plant capable of producing 20 gallons of liquid milk an hour can be installed at comparatively small cost. The machine is extremely simple to operate and can be handled by any employe of the apartment. Presuming that the milk delivered to the tenement contained 3.6 per cent butter-fat and the cream 30 per cent butter-fat, the daily consumption would amount to $7\frac{3}{4}$ pounds of unsalted butter and $8\frac{1}{2}$ pounds of powdered skimmed milk. It can easily be perceived that it would not be necessary to make daily delivery of these products—that one tub of butter could be delivered once a week and powdered skim milk could be purchased in barrels whenever necessary. The milk could either be bottled in the apartment house or delivered to each apartment in individual containers furnished by the housewife. In the case of hotels, restaurants, soda fountains, and so forth, the milk is now being delivered in 10-gallon cans daily. Here the distribution cost would be greatly reduced by the installation of an Emulsor in each store or place of business.

Some of the leading metropolitan hotels, whose difficulty in obtaining an adequate supply of cream can well be appreciated, are equipped with Emulsors, being thus able to provide their guests with a fresh product—five minutes instead of many hours old—at all seasons of the year. So, too, in the case of hospitals, in which a plentiful supply of fresh, sweet milk and cream of any desired fat content is vitally necessary.

The difficulties attending the carrying of enough milk and cream on board ships during long voyages is at once apparent. The practicability of the Emulsor in this connection has been conclusively demonstrated. The same may be said for any isolated settlement, such as army, railway or construction camps.

In Ice Cream Making.

In the case of the soda fountain or restaurant these same machines can be used in the production of ice cream. In fact, many of the large manufacturers today are using the Emulsor to improve the quality of their ice cream. They pass the entire ice cream "mix" except the flavoring material, such as fruits, through the Emulsor, thus improving the flavor and affecting a more uniform emulsion.

The ice cream manufacturer equipped with an Emulsor has the additional advantage of being in a position to regulate his supply in accordance with weather conditions. On a hot day it is possible for him to make up additional cream to take care of his increased demand, while when the weather has turned cold or rainy and the demand has fallen off, he does not have to stand a loss from the souring of cream or milk.

The same equipment which is used for the production of milk and cream and for ice cream purposes can also be used in making up soda fountain syrups and confectionery, as well as custards and a great many emulsions necessary for the improvement of the products being offered to this class of trade. It might also be said that this method would be very practical for storing surplus milk during the summer and carrying it to make up a low-priced article in the winter; since the price of surplus milk is materially lower during the spring months, it would not be necessary to go to all the trouble of manufacturing the milk into butter, powdered skimmed milk and water, and then reversing the operation and making an emulsion, thus producing the normal milk and cream in the city.

The great advantage, however, is gained by the fact that this milk, when produced in the city, is practically as fresh as milk taken direct from the cow. It is a known fact that it is very difficult, especially in the poorer section of a city such as New York, for the housewife to keep liquid milk in the present day manner from becoming sour before she is ready to use it.

Emulsified Milk Keeps Well.

Frequent tests have been made in which emulsified milk has been held for two or three days at room temperature without any perceptible change in the flavor or great increase in the acid content. It would not, of course, be the object of the producers of emulsified milk to advise the users that it is not necessary to use ice, if for precautionary purposes only, but at the same time it is clear that the sale of freshly-made milk would be a great advantage, especially during the warm summer months. Incidentally, we are at present threatened with a shortage of ammonia, which may cause great distress by making it impossible for us to

manufacture ice. This will, of course, have a direct bearing on the milk distribution system.

In considering this method of milk production and distribution we must, of course, take into consideration the cost of the materials and the resulting cost of the liquid milk in the city. As the price of the two principal materials used, namely unsalted butter and powdered skimmed milk, varies at different times of the year, it will be necessary to adjust the cost of the emulsified milk accordingly. In the two tables given below the cost of milk containing 3.6 per cent butter-fat and the correct proportion of solids-not-fat, and a normal cream containing 30 per cent butter-fat are given in such form that one may immediately ascertain the cost of each product at the varying prices for the two raw materials.

Cost of Quart of 3.6 Per Cent Milk in Cents When Cost of Butter and Powder Is Known.

—COST OF POWDERED SKIMMED MILK— (In cents per pound.)								
*	35	30	28	26	24	22	20	15
75	13.75	12.75	12.35	11.95	11.55	11.15	10.75	9.95
70	13.30	12.30	11.90	11.50	11.10	10.70	10.30	9.30
65	12.85	11.85	11.45	11.05	10.65	10.25	9.85	8.81
60	12.40	11.40	11.00	10.60	10.20	9.80	9.40	8.40
55	11.95	10.95	10.55	10.15	9.75	9.35	8.95	7.95
50	11.50	10.50	10.10	9.70	9.30	8.90	8.50	7.50
45	11.05	10.05	9.65	9.25	8.85	8.45	8.05	7.05
40	10.60	9.60	9.20	8.80	8.40	8.00	7.60	6.60
35	10.15	9.15	8.75	8.35	7.95	7.55	7.15	6.15
30	9.70	8.70	8.30	7.90	7.50	7.10	6.70	5.70

*Cost of butter per pound (cents).

Cost of Quart of 30 Per Cent Cream in Cents When Cost of Butter and Powder Is Known.

—COST OF POWDERED SKIMMED MILK— (In cents per pound.)					
*	35	30	25	20	15
75	59.75	59.25	58.75	58.25	57.75
70	56.05	55.55	55.05	54.55	54.05
65	52.30	51.80	51.30	50.80	50.30
60	48.55	48.05	47.55	47.05	46.55
55	44.80	44.30	43.80	43.30	42.80
50	41.05	40.55	40.05	39.55	39.05
45	37.30	36.80	36.30	35.80	35.30
40	33.55	33.05	32.55	32.05	31.55
35	29.80	29.30	28.80	28.30	27.80
30	26.05	25.55	25.05	24.55	24.05

*Cost of butter per pound (cents).

To these costs of raw materials must necessarily be added overhead charges, labor, power, etc. These items also will vary in accordance with the conditions in which the emulsifying unit is being operated.

Health Authorities Endorse Process.

It will be of interest to those acquainted with the Department of Health in New York City to know the stand being taken by this department with reference to the sale of emulsified milk and cream in New York. Some 20 or 30 members of the Department of Food and Drugs have been present at demonstration runs held for their benefit, and it is the frank opinion of these representatives that emulsified milk and cream are bound to solve many of the problems now confronting the officials and people of New York in connection with the securing of an adequate, pure and economical milk supply.

Following is a copy of the report made by Dr. M. C. Shroeder, of the New York Department of Health, covering bacterial analyses of the emulsified milk and cream produced at the demonstrating plant of the Merrell-Soule Company.

RESEARCH.

Bacterial analysis of synthetic milk.

The following data are the results of the bacterial analysis of the samples of synthetic milk taken at the Merrell-Soule Plant, 139 Franklin Street, on January 29, 1918:

No. 1—Powdered skimmed milk.....	25,800 gr.
No. 2—Unsalted market butter.....	171,000 gr.
No. 3—Water from tank.....	216,000 cc.
No. 4—Powdered skimmed milk and water, 145 Fahr.	2,900 cc.
30 PER CENT CREAM.	
No. 5—Pasteurized product from tank....	1,700 cc.
No. 6—Pasteurized and emulsified product.	1,200 cc.
No. 7—Pasteurized, emulsified and cooled product	1,100 cc.
4 PER CENT WHOLE MILK.	
No. 8—Emulsified product, 146 Fahr.	2,050 cc.
No. 9—Emulsified and cooled product....	2,200 cc.

Other Processes Tried.

Various processes other than that herein described have been devised and are being used in the attempt to produce milk and cream from their component parts, but each of these methods possesses features which makes its use less desirable and in many instances impracticable. Some of these processes subject the cream to unsanitary air or steam jets, while others make use of various other devices. Whatever may be said for milk or cream produced by these machines, it is admittedly abnormal. The De Laval Emulsor is the only machine which produces normal milk or cream, to which nothing has been added and nothing taken away, either as to bulk or proportions.

The De Laval Emulsor, it would appear, is the balance wheel of the milk distribution situation. Its importance can hardly be overestimated.

Dr. Blanck Takes Dr. Caspari's Place.

The vacancy in the Maryland State Board of Health, occasioned by the death of Dr. Charles Caspari, has been finally filled by the appointment of Dr. F. C. Blanck, formerly of the Food Division, United States Department of Agriculture, as Food and Drug Commissioner of Maryland. Doctor Blanck is a native of Baltimore and a graduate of Johns Hopkins University and was for a number of years at the head of the Food and Dairy Division of the Baltimore Health Department.

Dr. H. L. Russell Joins Food Administration.

A recent addition to the staff of the Food Administration is Dr. H. L. Russell, dean of the College of Agriculture and director of the Agricultural Experiment Station of the University of Wisconsin. Dr. Russell will serve as a connecting link between the U. S. Department of Agriculture and the Food Administration in handling production problems. He will also, by consent of the Department and of the Federal Food Administrators in the various states, connect the work of the Food Administration with the extension agencies of the agricultural colleges.

The New Buhl Patented Dryer

By KENNETH LOCKETT

AT the present time when the entire country is striving to conserve its resources not only in raw materials, but also in transportation and in storage facilities, a description of the New Buhl Patented Dryer, manufactured by The G. A. Buhl Company of Chicago should be of general interest along the line of increasing storage facilities. With this machine it is possible to reduce successfully to a powdered form such delicate substances as full or skimmed milk, buttermilk, beef blood, eggs, gelatines, etc.

This Dryer removes the water from fluid substances without injury to their chemical composition, reducing them to the form of a powder which is absolutely resoluble and which will keep indefinitely without refrigeration or the use of sealed containers.

The principal difficulties encountered in the ordinary processes in use at the present time are due to the presence of air which causes certain chemical actions during the drying, and to the injury to the material by the heat employed.

To appreciate the remarkable results obtained with the Buhl Dryer three things must be born in mind: first, steam at atmospheric pressure is dry if the temperature is kept above 212° F.; second, albumen and similarly delicate substances when dry can be subjected without injury to much higher temperature

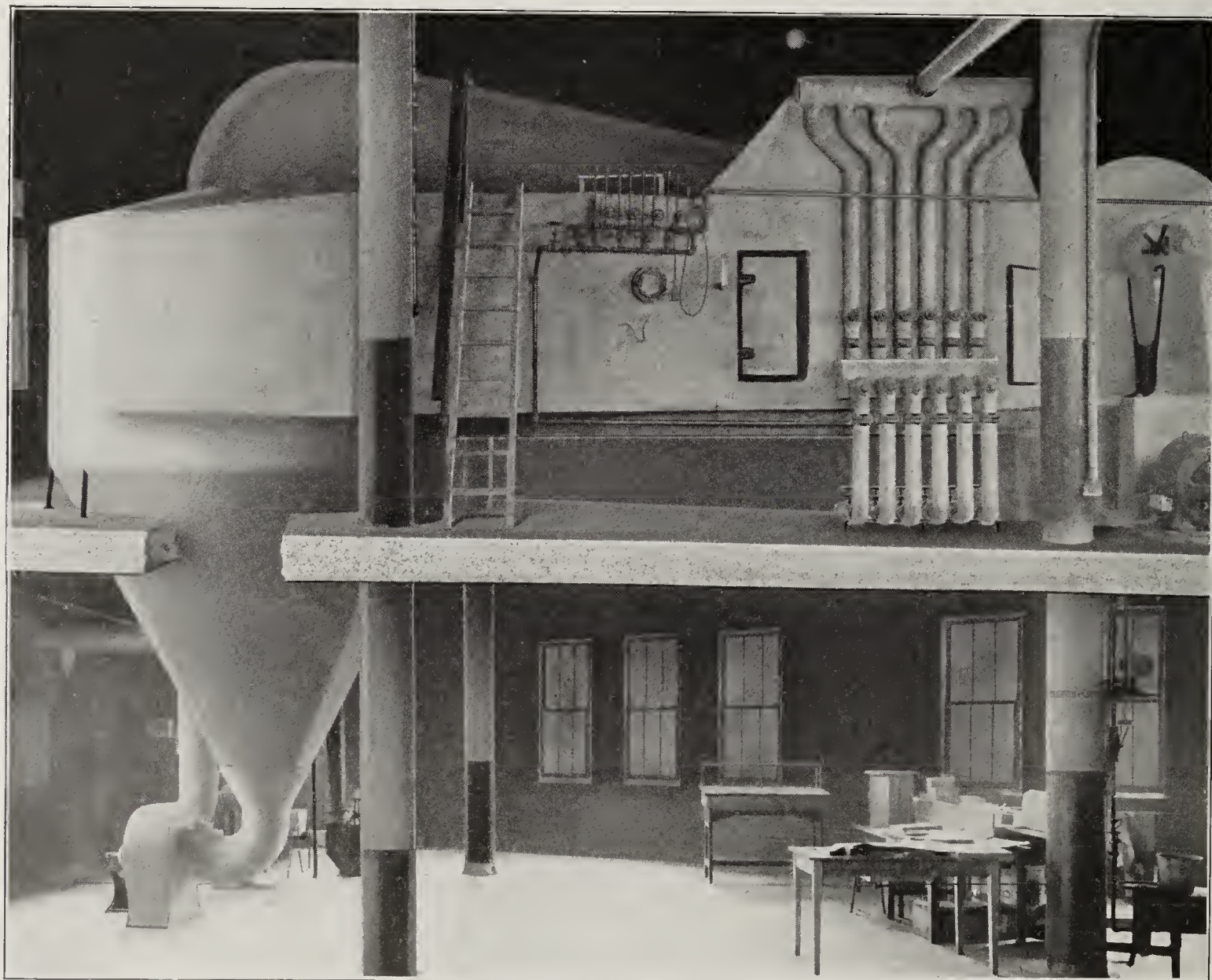
than when in the wet state; third, the operation of this plant as a closed system using superheated steam as a drying medium makes it impossible for air to come in contact with the material until it is removed in its dry form.

With the above facts in mind the following description of the plant and its operation will be readily understood.

The plant is of the spray type, the principal parts being, *heater* (which can be arranged for steam, flue gases from the chimney, or an independent furnace for coal, coke or oil), *spray chamber* with atomizers, *fan*, *collection chamber* with discharge mechanism for continuously removing the dry product, *return pipe* with exhaust outlet for the excess steam, and the *pump* for the atomizers.

The operation of the plant is extremely simple and when once the plant is started it can be run continuously for any length of time.

The *heater* is first brought up to a proper operating temperature and the *fan* then set in motion. The whole system is full of air, which is circulated by the *fan* through the *heater*, *spray chamber*, *collection chamber* and back through the *return pipe*. As soon as the air has become thoroughly heated (which only requires a few minutes) water is introduced through the *atomizers* by means of the *pump*. This water,



BUHL PATENTED DRYER ERECTED FOR THE PETER SCHOENHOFEN BREWING COMPANY, CHICAGO, ILLINOIS.

coming in contact, in its finely-divided state, with the heated air is at once volatilized, thus increasing the volume and pressure in the system. This excess volume is allowed to escape through the exhaust opening, thereby keeping the inside of the plant at atmospheric pressure. It will readily be seen that the escaping vapor at first will be part air and part steam, so that after the plant has run for a few minutes all of the air will have been expelled and nothing will remain but steam which is superheated by being drawn through the *heater*.

When this condition is reached the liquid to be dried is sprayed into the spray chamber through the *atomizers*. The water in the liquid is immediately turned into steam by contact with the circulating superheated steam, the plant being so regulated that the resulting steam is kept at a temperature above 212° F. (Actually about 220° F.) The dry product thus formed is carried in suspension by the steam until it reaches the *collection chamber* where it is separated out and continuously removed by the discharge mechanism. The steam (at approximately 220° F.) passes out through the *return pipe*. The excess escapes through the exhaust opening and the balance is drawn through the *heater* where it is superheated and then recirculated, making the process continuous.

The evaporation of the moisture in the liquid is so rapid that the solid particles are actually cooled and

as they are immediately removed from the *collection chamber* (the actual time from *atomizer* to point of discharge being less than three seconds) they have no chance of being heated enough to be injured.

The cost of evaporation is reduced to a minimum as the heat required is only that which is actually necessary to evaporate the moisture in the material to be dried, no heat being lost except a small amount due to radiation. The steam exhausted from the machine (being at atmospheric pressure and approximately 220° F.) can be used in precondensing apparatus, thus further reducing the cost of operation.

Summing up the important features of this new Dryer we have:

(1) A closed plant capable of being operated continuously and in which the material is dried in "an atmosphere of its own vapor," no air coming in contact with the material until it is removed in its dry state.

(2) The production of a product in powdered form which has in no way been changed from the original substance excepting that the water has been removed, and which is absolutely resolvable.

(3) The loss of dried product reduced to a negligible quantity.

(4) A low cost per pound of dry product produced.

The Yellow Color of Cream and Butter.

Experiments recently concluded at the Missouri Agricultural Experiment Station have cleared up a great many points about yellow and white butter that have hitherto been little understood, says L. S. Palmer in circular 74 of the experiment station. Among other things, the natural yellow coloring matter has been identified and the cause of its variation discovered. The experiments have made it possible to determine in advance when a cow may be expected to produce yellow colored products. In fact, the whole question of the natural yellow color of dairy products can now be put on a scientific basis. A brief summary of the work and some of its practical applications are set forth.

"General observation for many years has shown that plenty of fresh green forage for the dairy cow means yellow cream and butter. The general belief has been that nature provides the materials in the grass out of which the cow can in some way manufacture the yellow color for the milk. It was found, however, that a very simple relation exists between the feed and the color of the cream and butter. Instead of nature providing the materials for the cow to work with, it was found that nature provides the coloring matter itself. Fresh green feeds of all kinds are rich in yellow pigments, or coloring matters, which are covered to the eye by the green color of the plants, which is called chlorophyll. There are two classes of the yellow pigments found accompanying the chlorophyll. One of these is called carotin, the name being taken from the pigment of the carrot, where it was first discovered by scientists over one hundred years ago. The other class of yellow pigments is called xanthophyll. The latter is really the more abundant of the two yellow pigments in green plants. A study of the yellow pigment of butter showed that it was identical with the carotin of the green feeds and of carrots. This result indicated that the lack of yellow color in cream and butter when feeding certain feeds was probably due to the fact that these feeds contained little or no carotin. This was found to be the case. It must be said, however, that the feeds very rich in carotin did not produce as yellow products in the case of Holstein, Shorthorn, and Ayshire cows as they did in the case of Jerseys. All the breeds were alike,

however, in producing white cream and butter on the carotin-poor rations.

"There are relatively few feeds that furnish an abundance of carotin for the cream and butter, and of these there is only one that cows ordinarily receive as their sole ration, namely, pasture grass. These are the feeds that contain the greatest amount of carotin and impart to the cream and butter its deepest color. They are the summer feeds. The winter feeds in nearly every case are the feeds that contain little or no carotin.

"Considering the whole question of the relation of the feed to the color of cream and butter, it does not appear possible for the dairy farmer to materially help the usual white condition of his cream and butter during the winter months by feeding the cow any special feeds. Although it might be possible to select a ration that would help in this respect, it is very doubtful if it would be an economical thing to do. The consumer must be satisfied with the naturally colorless condition of his cream during the winter; and the butter-maker must use some butter color at this season of the year if he wishes to have yellow butter.

"The popular belief that color and richness in dairy products are synonymous has led many people to assume that the high color obtained when cows first go onto pasture in the spring indicates a very great increase in the amount of fat in the milk. These beliefs have no foundation. The yellow color of milk and cream is due, of course, to the fat in the milk which carries the yellow pigment. There is no general relation, however, between the amount of color in the milk and cream and the amount of fat in these products. The only certain way to tell the amount of fat in milk is by the well known Babcock test. As a matter of fact, instead of cows giving a low per cent of fat in the winter when the fat is usually naturally colorless, it has been definitely demonstrated that cows on the average give a higher per cent of fat during the winter than they do in the spring and summer.

"The belief in the relation of the color of dairy products to their quality has been extended to include the butter, and the public now demands a yellow product from the creamery throughout the year. It appears that this demand has no foundation as long as the other qualities of the butter are normal, except that the yellow product is undoubtedly more pleasing to the eye. There is no relation between either the taste or the nutritious qualities and the color of the butter, and it may be stated in addition that white butter is just as natural as yellow butter."

RETAIL PRICE

Average Price per Pound	Average Price per 100 Calories		Lima, Ohio	Concord, N. H.	Boston, Mass.	Providence, R. I.	New York, N. Y.	Trenton, N. J.	Philadelphia, Pa.	Washington, D. C.	Lynchburg, Va.	Wheeling, W. Va.	Raleigh, N. C.	Atlanta, Ga.
CEREAL PRODUCTS														
6.3	.39	Wheat Flour, War Std., 49 lb. bag	330	330		330	370		350	320	325	310	315	350
7.4	.47	Rye Flour, Std., 24½ lb. bag	175	185	196	175	190	196	195	196	200	165	195	180
7.3	.45	Graham Flour, 10 lb. bag	70	75	80	75	80	70	80		90	65	80	75
10.9	.67	Corn Starch, lb.	10	12	8	10	9	10	12	9	10	10	10	12
8.6	.54	Corn Flour, 5 lb. bag		45	44	40	45	35	40		45	35		
6.8	.42	Corn Meal, lb.	7	7	7½	7	8	7	8	6	6	7	6	5
8.6	.52	Barley Flour, lb.		9		7	15		10		10	8		
8.7	.48	Oat Meal, lb.	10	10	7½	8	8	8	10		10	8	12½	9
8.3	.46	Oats, Rolled, Bulk, lb.	8	9	7½	7	7	8	7	6	10	8	15½	
10.9	.66	Rice Flour, lb.	10				10	12	8		15	12½	12½	
10.1	.64	Buckwheat Flour, lb.	10	12	8½	10	9	9	10	7	10	9	12½	10
9.5	.59	Hominy Grits, lb.	8	10		8	8	12	10	8	10	8	7	8
9.9	.55	Armour's Oats, 1 lb. 4 oz.	12	12		12	14	12	12	12	12	12		
11.1	.61	Purity Oats, 1 lb.		9		10	10		10		12	10	15	
9.9	.55	Quaker Oats, 1 lb. 4 oz.	12	12	10	11	10	11	12	10	12	12	15	12
12.3	.77	Rice, Fancy, Head, lb.	12½	13	12	12	10	16	14	12	12	10	12½	12½
11.1	.69	Barley, Pearled, lb.	8½	15	8	8	8	8	12	6	12	8	12½	
9.3	.79	Bread, lb.	10	9	7	6	10	8	9	8	10	10	10	10
20.8	1.09	Crackers, Graham, lb.	22	25	22	22	17	18	22	15		22	30	25
20.0	1.04	Crackers, Oatmeal, lb.	20	25	22	22	18	14		16		22		
14.2	.87	Macaroni, lb.	13	15	11	12½	11	14		15	15	15	15	20
SUGAR, SYRUP AND MISC.														
9.1	.50	Granulated Sugar, lb.	9	9	9½	9	8	9	8½	8½	9¼	9	10	9
7.6	.53	Corn Syrup, 10 lb. pail	85				90				60		100	79
27.8	1.88	Comb Honey, lb.	28	40	30		30	29		30	25	35	22½	20
29.7	1.32	Cocoa, Bulk, lb.	30	30	26	20	20			30	40	30	60	
30.0	5.00	Eggs, fresh gathered, firsts, doz.	45	70	47	62	45	60	45	40	46	40	35	37½
5.8	1.87	Milk, qt.	14	12	12	14½	12	13	14	15	12	14	11½	
35.6	1.71	Cheese, American Cheddar, lb.	40	35	34	34	32	32	35	31	35	38	35	35
FATS														
49.6	2.09	Bacon, Sliced, lb.	55		42	48	45	40	48	50	50	45	55	48
55.9	1.60	Creamery Butter, Fancy, lb.	58	60	54	59	55	58	60	53	55	60	60	55
32.6	.79	Pure Leaf Lard, lb.	33	35	32	33	34	32	35	31	32	30	35	30
34.4	1.01	Oleomargarine, Uncolored, lb.	35	38	33	32	32	34	34	30	35	35	40	35
34.3	.97	Nut Margarine, Uncolored, lb.	35	35	33	33	32	35	32	30	35	35	40	35
69.1	1.73	Italian or Spanish Olive Oil, qt.	150	125	140	150	140	115	125	125	150	125		100
36.1	.90	Cottonseed Oil, qt.	75	85		75	60	80	75	70	85	62½	60	50
35.9	.89	Corn Oil, qt.	70		65	75	70		70	65	90			75
45.0	1.12	Peanut Oil, qt.					60				90			
27.9	1.02	Peanut Butter, lb.	30	30	25	29	30	22		20	40	30	35	35
FRUITS AND VEGETABLES														
19.9	1.51	Evaporated Apples, lb.	25	30	25	23½	20	25	25		15	18	25	
17.5	1.46	Evaporated Peaches, lb.	20	30	13	20	18	15	20	13	15	16½	20	15
13.7	6.52	Canned Peaches, No. 2½, Std., 29 oz.	25	30	24	18	20	25	25	25	30	22	35	25
14.3	2.04	Canned Pineapples, No. 2½, Std., 30 oz.	30	30	23	25	25	27	25	22	30	28	25	30
15.3	.98	Raisins, Seeded, per pkg., 15 oz.	15	15	13	14	14	16	15	12	12	15	18	15
15.5	1.34	Prunes, Medium Size, lb.	17½	15	13	14	15	16	18	10	15	15	20	15
2.9	.97	White Potatoes, lb.	3	4	3½	3	3½	2½	3½	3	4	2½	4	3½
7.2	1.60	Sweet Potatoes, lb.	10	10	7½	8	5	3	6	7	5	8	4	5
4.3	2.15	Onions, lb.	5	5	5	2½	3½	3	3	4½	8	4		4
17.8	1.13	Navy Beans, dry, lb.	20	20	19	18	19	18	19	17	18	18		17½
14.3	15.89	String Beans, Cnd., No. 2, Std., 19 oz.	15	25	16	16	13	15	20	10	18	15	25	15
12.8	2.91	Corn, Canned, No. 2, Std., 20 oz.	13	22	16	15	16	15	21½	17	15	15	20	15
13.2	5.28	Peas, Canned, No. 2, Std., 20 oz.	18	20	14	15	14	15	21½	18	18	15	30	20
16.3	1.01	Split Peas, lb.		15	13	13	13	16	18	15	20	16	20	15
22.7	1.22	Peanuts, unshelled, lb.			25		15½			15	25	20	13	
9.4	9.40	Tomatoes, Cnd., No. 3, Std., 33 oz.	20	25	18	20	18	20	19	19	20	20	20	20
5.7	4.75	Cabbage, lb.	6	8	6	5	7	4	4	6	6	9	7	5
4.4	2.59	Beets, lb.	5	7	5	5	3	4	3		5	4	5	5
3.8	2.11	Turnips, lb.	6	7	3½	3	3	4	3	4	5	5	4	4
MEATS AND FISH														
29.3	4.51	Beef, Round Steak, lb.	32	38	30	32	35	32	40	35	25	35	30	25
36.3	7.26	Veal Cutlets, lb.	35	45	35	48	48	45	40	38	35	45	30	30
29.4	3.38	Leg of Mutton, lb.	30	32			25		28	35	30	30	35	
34.5	4.11	Leg of Lamb, lb.	40	32	32	30	35	30	35	35	35	38	40	
33.1	2.69	Pork Chops, lb.	32	32	33	38	36½	35	35	35	30	35	40	30
45.8	2.41	Ham, Sliced, medium fat, lb.	50	45	42	55	45	40	48	50	42	45	45	40
43.2	14.89	Chickens, Broilers, lb.	40	45	40	42	50	45	45		40	50	35	
24.5	6.80	Salt Cod, lb.	25	25	13	22	25	22	25	22	25		30	30
24.7	2.47	Salt Mackerel, lb.	25		20	18	27½	19	35	20	20	24	25	30
31.5	7.00	Halibut, lb.	35		35	35	30		38	32	35	30	30	
31.1	4.86	Salmon, fresh, lb.	32			35	30		55		30	35	35	
28.2	4.27	Salmon, canned, No. 1, tall, 1 lb.	30	30	25	26	25	22	30	35	30	28	35	25

* These prices are taken from a store which

MARCH 1, 1918

Columbus, Ohio	Indianapolis, Ind.	Louisville, Ky.	Lexington, Ky.	Nashville, Tenn.	New Orleans, La.	Oklahoma City, Okla.	Little Rock, Ark.	Chicago, Ill.	Detroit, Mich.	Madison, Wis.	St. Paul, Minn.	Fargo, N. D.	SiouxFalls, S. D.	Topeka, Kans.	Denver, Colo.	Tucson, Ariz.	Salt Lake City, Utah	Reno, Nev.	San Francisco, Cal.	Los Angeles, Cal.
340	238	320	330	312	336	265	300	295	290	305	250	290	300	280	265	330	260	245	295	295
171	220	165	165	.....	147	.....	150	160	152	171	170	180	184	184	175	183	.....	225	180	170
70	75	65	70	80	.....	70	61	70	70	70	60	65	75	70	75	70	60	80	70	63
10	14	12	10	7½	12	12	11	10	10½	12	11	12½	12½	8	12½	10	11	12½	15	11
37½	38	39	38	.....	35	50	.....	.....	.....	35	35	.....	40	9	50	.....	45	.....	38	42
6	7½	6	6	5	7	6	6	7	7	7	7	7½	7	6	5½	8	7	8½	6½	8½
7½	9	8	8	.....	7½	8⅓	10	8	8½	9	8	8	7½	.....	10	8	8	7	8	8⅓
10	10	12	15	7	7½	12½	.....	.....	12	10	.....	.....	.....	.....	10	.....	10	10	8	9
10	10	10	10	13	8	10	.....	10	10	10	9	9½	11	10	12½	12½	10	11½	11½	9½
10	10	7	10	7	6	8⅓	6	7	8½	12	10	8	12	10	10	10	10	8½	8	9
12	.....	12	12½	.....	12	.....	12	12	13	12	12	12½	.....	10	12½	20	.....	.....	.....	.....
12	.....	10	12½	.....	7½	.....	10	10	.....	12	10	.....	.....	10	12½	20	.....	.....	.....	.....
12	12	10	12½	10	12	12½	12	12	12	12	12	12½	13	.....	12½	20	8	.....	.....	.....
15	14	12	12½	10	10	10	12	13	12	12	12½	12½	14	12½	12½	20	15	18	15	12½
10	10	9	15	12	10	9	15	12	9	15	10	10	15	15	10	20	12½	12½	12½	12
10	9	8	9	12	9	10	10	9	8	8	9	10	10	9	10	10	12½	13	15	10
25	20	20	30	10	20	20	.....	20	20	18	20	20	28	20	20	17	20	10	10	10
25	.....	20	.....	18	20	20	.....	20	20	18	20	20	28	20	20	17	20	15	25	18
15	18	12	20	10	10	15	13	15	12	10	12½	13	20	18	12½	15	20	15½	20	18
9	9	9	9	8½	9	9	9	9	9	9	10	9	9½	10	8¼	10	9½	9	9	8⅓
82½	78	70	85	70	90	75	75	.....	85	80	75	85	90	75	80	115	90	98	115	80
30	27½	35	25	35	35	25	20	28	30	25	25	30	31	25	20	.....	20	20	25	25
25	29	.....	20	28	30	27	30	25	25	30	25	35	50	25	35	.....	.....	45	20	22½
50	45	43	40	38	45	35	35	47	60	48	45	43	40	35	45	45	45	38	40	40
13	11	13	13	10	8	15	20	13	15	10	10	13	10	9	12	12½	12	10	12	.....
38	45	35	40	45	35	40	35	35	36	35	35	35	37½	38	35	35	30	30	35	30
50	50	50	40	45	48	.....	45	45	50	45	50	48	60	55	55	60	50	50	60	60
60	54	53	58	52	56	52	55	55	55	51	54	50	55	51	50	65	51	60	60	58
35	33	30	35	32	32	.....	35	.....	36	33	28	33	33	34	30	32½	30	35	35	27
32	35	37	35	35	37	33	35	35	35	30	35	35	35	31	33	40	30	40	35	35
32	33	35	.....	32	35	33	35	35	35	34	33	35	36	35	33	.....	38	.....	40	35
35	115	160	130	165	115	140	100	115	185	125	125	140	135	.....	135	135	155	125	100	105
60	43	65	85	60	50	84	.....	66	73	85	55	.....	58	.....	70	90	85	60	66	.....
32	69	70	65	.....	70	73	.....	40	74	85	65	65	65	.....	75	75	65	75	80	62
35	94	68	.....	.....	70	.....	.....	.....	.....	85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	29	22	30	25	25	30	25	25	30	30	22	40	35	25	25	35	20	25	30	22
14	.....	18	15	17	20	12½	15	.....	25	.....	22	.....	.....	15	20	20	17½	15	19	16
20	18	18	16½	12½	20	15	15	18	22½	19	18	18	18	15	20	20	15	12	14	15
30	25	22½	25	22	25	24	25	25	24	27½	25	30	25	22	25	25	25	20	25	17
30	35	26	30	25	20	27	25	25	30	25	30	30	27½	25	25	25	30	25	25	16
15	14	12	12½	12	13	15	15	15	15	15	15	15	17	15	12½	15	12½	15	15	11
20	19	16	18	12½	12½	12½	15	18	12½	19	15	18	13	17	15	15	15	12	15	12
3	3	3	3½	3	3½	2⅓	3	2	2½	2	3	2	4	3	2	3	1¼	1¼	3	2
8	10	7	7	4	3	6	4	10	10	.....	10	.....	10	7	10	7½	10	10	7½	5
6	2½	5	7	5	4	4	4	5	3½	5	4	5	5	5	4	4	4	2½	3	2½
18	18	17	19	16	15	16	18	19	17	19	17½	20	19	17½	17½	16	15	17	18	16
20	23	16	15	13	15	14	20	18	18	25	15	18	17	16	15	15	15	15	20	13
18	15	15	17½	13	12½	15	15	15	18	20	15	15	15	15	15	15	17½	15	17½	12
20	19	16	16½	13	15	12½	15	16	18	19	12½	15	15	15	15	20	12½	15	17½	11
30	23	15	15	15	15	15	.....	15	15	.....	18	15	.....	20	25	12½	15	15	10	12
13	.....	20	20	19	.....	.....	.....	25	20	20	25	28	25	.....	25	.....	22½	30	25	.....
25	23	20	15	14	17½	17½	20	22	29	20	18	20	20	15	20	20	15	17	20	.....
6	6	6	5	7	3	7	7	7	6	5	5	5	6	6½	4	7	5	4	3	3⅓
.....	10	5	.....	5	4	5	5	4	5	5	4	4	.....	.....	2½	5	3	1½	1	.....
5	5	4	3	5	4	4	3	4	3	5	3	4	5	2½	2½	5	3	1¼	1	.....
10	30	30	30	30	25	26½	27	25	30	20	28	25	25	30	32	33	27½	26½	22½	25
5	32½	40	40	35	33	32½	.....	35	35	25	30	30	25	35	40	35	35	35	25	45
10	.....	30	25	40	25	30	30	28	30	21	26	30	28	30	30	35	27	28	27½	.....
10	37½	40	35	50	32	35	35	35	35	26	28	35	30	38	40	35	32	32	30	35
10½	.....	30	35	30	33	28	27½	35	35	30	33	28	32	25	35	40	35	33½	32½	35
8	47½	40	45	50	40	36½	45	45	45	45	50	45	40	37½	60	50	50	50	37½	50
5	42	30	60	32	45	45	.....	38	35	.....	.....	32	.....	50	.....	.....	.....	40	65	55
5	31	20	25	20	20	22½	35	30	25	24	18	20	32	30	17½	25	30	.....	25	.....
8	35	30	25	17	25	25	35	25	30	27	20	30	25	30	20	15	25	.....	22½	22
0	30	25	35	.....	40	32	35	30	30	27	28	30	28	25	30	30	32	.....	35	25
0	30	25	25	.....	25	25	35	30	30	28	25	30	28	.....	35	30	40	35	32	30
8	30	25	30	.....	25	29	35	30	23	.....	28	18	30	30	35	25	35	30	20	19

veries and only cash sales.

Membership Nearly 1,000—and GOING STRONG!

National Poultry, Butter and Egg Association

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EXECUTIVE OFFICES
210 OGDEN BUILDING
192 NORTH CLARK STREET
Phone Franklin 3876
W. T. SEIBELS, Business Manager
W. M. O'KEEFE, Asst. Business Manager

Chicago, February 23, 1918.

Robert G. Gould, Editor,
American Food Journal, Chicago, Ill.

Dear Sir: I have just finished reading the article, "Fraudulent Egg Substitutes," on page 73, of the February number of "THE AMERICAN FOOD JOURNAL."

It would seem from the analyses submitted that there can be no doubt that the manufacturers of these so-called substitutes are guilty of the rankest kind of fraud—that devious commercial process of leading the unsuspecting consumer to believe that he is getting something other and different, something better, if you please, than he is really obtaining, and at the same time charging an outrageous price for the inferior substitute.

Of all forms of fraud, that which pertains to foodstuffs is deserving of the least sympathy; for, whatever we put into our stomachs, to a large extent determines our capacity for mental or physical work.

These damnable hyenas who seek to capitalize the well-being of the consuming public, ought to be dealt with by the authorities and punished to the extent of the law, for there must be some law to reach them. Without venturing an opinion, it would seem to me that the Truthful Advertising law ought to fit the case, but so long as some of our dirty newspapers will take almost any money that is offered them for space—and I am sorry to say that too many publishers openly wink at abuses of this kind—I very much fear it will be hard to invoke the law through our courts so as to reach these vendors of trash under a pleasant-sounding title.

The U. S. Food Control law aims, among other things, to stop "profiteering" in all kinds of foodstuffs, and I believe some benefit has been secured under its operations to this end. Now, can you conceive a worse profiteer than these jackals who undertake to foist their nostrums and substitutes upon an unsuspecting public under a claim which cannot in fact be substantiated? I insist that my query is pertinent, and I would like to see what Mr. Hoover and his staff of able assistants would have to say in answer to the point-blank application of the law to this very matter.

O, yes, I hear somebody say that I am denouncing these egg substitutes because they are likely to affect the consumption of hens' eggs in which our trade are directly interested. Hold your tongue just a moment! We would object to the fraud even if it were being attempted by our own people, because we realize that no business worthwhile can spring from fraud or be tinged with it. Never mind about hens' eggs—that can have nothing to do with the question at issue, for there is no substitute for eggs—the real eggs. See Sherman on "Food Products," as well as other leading authorities. Moreover, hens' eggs have always been, are now, and will ever be, SOLD ON THEIR MERITS. Nor is it necessary or desirable to try to increase egg consumption by knocking other good foods.

WE SAY STOP FRAUD IN THE MAKING AND SELLING OF ALL KINDS OF FOODSTUFFS.

Very truly yours,

W. T. SEIBELS.

Experimental Formulae for Victory Bread

THE United States Food Administration has been asked by bakers and others for formulae for baking Victory bread, the name that has been given by the Food Administration to bread containing twenty per cent or more of wheat flour substitutes. Because of the differences in methods and equipment used by bakers and in the availability of wheat flour substitutes and other ingredients in different localities, the Food Administration has decided to recommend no specific formulae.

The Food Administration has, however, been furnished formulae by a number of bakers who have used them successfully in the commercial production of mixed cereal breads and it is glad to give inquirers the benefit of the experience of these bakers. The individual baker is, however, advised to use these formulae only as guides; to experiment for himself and, as a patriotic duty, to exert his skill to the utmost in making his own Victory bread as attractive and palatable as possible.

The list of wheat flour substitutes includes bran, shorts and middlings, corn flour, cornmeal, edible cornstarch, hominy, corn grits, barley flour, rolled oats, oatmeal, rice, rice flour, buckwheat flour, potato flour, sweet potato flour, milo, kafir and feteria flours and meals, casava, taro and banana flours, soya bean meal, peanut meal and other products of a similar nature. Potatoes may also be used, but on account of their high moisture content, four pounds of potatoes must be taken as the equivalent of one pound of the substitutes required.

Bread made of graham flour or so-called whole-wheat flour, which contains twenty per cent or more of bran, shorts and middlings may be termed Victory bread. Bakers need no instructions regarding the production of this latter type of bread.

It is expected that the substitutes used will vary with the locality. Bakers are advised to use substitutes locally produced, where possible, in order that they may obtain them at the lowest cost and with the least transportation.

The formulae which follow give suggestions for the use of only the most plentiful of these substitutes, but the skillful baker will undoubtedly be able to apply them as a guide in using other substitutes if they happen to be locally available. Many valuable formulae for the baking of mixed flour bread will also be found in the pages of current bakers' journals. Bakers will benefit the trade at large by reporting the result of their experiments to their trade associations and journals.

Mixture of Cornmeal and Wheat Flour.

CORN FLOUR, EDIBLE CORNSTARCH, CORN GRITS.

	Pounds
Cornmeal	40
Wheat flour	156
Sugar	3
Salt	3½
Water, approximately	123
Yeast	2
*Shortening	1¾
†Milk	As desired

Mixture of Oatmeal and Wheat Flour.

ROLLED OR CRUSHED OATS.

	Pounds
Oatmeal	40
Wheat flour	156
Sugar	3
Salt	3½
Water, approximately	127
Yeast	2¼
*Shortening	1½
†Milk	As desired

Mixture of Barley Flour and Wheat Flour.

	Pounds
Barley flour	40
Wheat flour	156
Sugar	3
Salt	3½
Water, approximately	120
Yeast	2½
*Shortening	1½
†Milk	As desired

Mixture of Rice Flour and Wheat Flour.

	Pounds
Rice flour	40
Wheat flour	156
Sugar	3
Salt	3½
Water, approximately	123
Yeast	2
*Shortening	1½
†Milk	As desired

*Shortening may be entirely eliminated if desired.

†When milk is used proper deductions should be made for the water contained therein.

To enable the baker, who has not been using wheat flour substitutes, an opportunity to study the effect of these substitutes on the method of mixing, handling, fermenting, and "proofing" of the doughs, it will be found desirable to begin with one quarter the amount of substitutes called for in the above formulae and gradually increase the amount until the full 20 per cent, or forty pounds of substitutes to 156 pounds of wheat flour, is being successfully used.

All the wheat flour substitutes named in the formulae accelerate the fermentation of the dough. The best results may therefore be obtained by not working the doughs as long as usual. No definite time of fermentation can be prescribed as the first "rise" will vary with the quality of the flour, the amount of substitute used, the temperature of the room and of the dough, the strength of the yeast and other factors.

But assuming that a dough is started at from 80 to 82 degrees F., a four hour fermentation will suffice. This will be divided approximately as follows:

2 hours 45 minutes for the first punch,
45 minutes for the second punch,
30 minutes to the bench.

The "proofing" should not exceed 45 minutes in order to allow sufficient "spring" in the oven.

Corn flour or meal as well as oat products absorb larger quantities of water than does wheat flour. The tendency will be to use less water than is essential to produce the best fermentation and the best expansion. The baker should begin, therefore, by using smaller quantities of the wheat flour substitute than are prescribed in the above formulae, increasing the amount of the substitute as well as the amounts of water, yeast, etc., until he obtains the proper results for his particular conditions.

The "proofing" of the doughs in the pans should be carried on with plenty of moist steam.

The moisture retaining qualities of the loaf may be improved by scalding approximately 20 pounds of the wheat flour substitute to the barrel of flour with 10 pounds (8 gallons) of hot water and allowing it to cool before mixing it with the dough.

When a "sponge" is made, the wheat flour substitute should be added to the "sponge" and this should be medium soft to obtain the best results. These wheat flour substitutes retain the moisture in the loaf longer than will wheat flour. They will normally yield an increased amount of bread due to their higher absorption of water and will reduce the amount of yeast and shortening necessary, or the time of fermentation.

BOOK REVIEWS

FOOD IN WAR TIME.—By Graham Lusk, Ph. D., Sc. D., F. R. S. (Edin.), Professor of Physiology, Cornell University Medical College, New York City. W. B. Saunders Company, Philadelphia and London. 46 pp. Cloth, \$0.50 net.

The author of this small but important book is well known to the readers of this JOURNAL. In this timely book he has condensed into the smallest space compatible with clarity a large proportion of our total knowledge of foods and feeding. Starting with a rational explanation of the apparent paradox of the long-established Italian peasant diet of corn meal, olive oil and green stuffs—the green stuffs supplying Dr. McCollum's "fat soluble A," otherwise known as vitamins—Dr. Lusk lays low the old canard against the use of corn, brings out vividly the need for milk in the diet, differentiates between oleomargarines and nut margarines, pays his respects to the present absurd legal control of butter substitutes, gives us the last word on the place in the diet of meat and concludes with an understandable dissertation on calories. If any one wants to spend 50 cents in order to learn how far we have advanced in scientific knowledge of foods this is the book for which to ask. It tells one the right foods to buy, the various combinations that will produce the greatest health efficiency at least cost, the energy value of foods and food requirements based on various occupations.

CLINICAL LECTURES ON INFANT FEEDING, by Lewis W. Hill, M.D., Children's Hospital, Boston, and Jesse R. Gerstley, M.D., Michael Reese Hospital, Chicago. 12mo. of 377 pages illustrated. Philadelphia and London: W. B. Saunders Company. 1917. Cloth \$2.75 net.

In these Clinical Lectures on Infant Feeding you are given the full details of the Boston method of infant feeding as developed by Dr. Rotch, and of the Chicago method. You are given the theory, use in both normal and abnormal cases, exact quantities and percentages. The book is almost equivalent to a post-graduate course in infant feeding. Each lecture is followed by clinics made up of the case records of the course, supplying concrete clinical examples of actual cases. The book brings the two systems right to your door.

GENERAL BACTERIOLOGY.—By William Dodge Frost, Associate Professor of Bacteriology in the University of Wisconsin, and Eugene Franklin McCampbell, Professor of Bacteriology in the Ohio State University. The Macmillan Company, New York, N. Y. 340 pp. \$1.60.

At the present time bacteriology is taught, in English-speaking countries at least, with special reference to some particular application, such as medicine or agriculture. Believing that there is a growing demand for information on the general subject of bacteriology, as contrasted with applied bacteriology, the authors have attempted to meet this need by publishing in book form material which they have used in college classes for a number of years. It is perhaps to be expected that bacteriology, like other branches of science, should follow the usual course—that is, find its first expression in the general terms of the research worker, next be taught as applied science on the theory that it is too complex for the average

student to master, and finally, upon realization that the whole branch of bacteriology can be grasped by the average mind, again be considered a part of general knowledge. It is to be hoped that all institutions of learning where dairying and other bacteriological studies are features will act upon the suggestion of Messrs. Frost and McCampbell and teach general bacteriology—not just a smattering sufficient to permit the student to understand its relationship to some one particular calling.

VEGETABLE FATS AND OILS: THEIR PRACTICAL PREPARATION, PURIFICATION, PROPERTIES, ADULTERATION AND EXAMINATION.—By Louis Edgar Andés, author of *Animal Fats and Oils, Drying Oils, Boiled Oil, Solid and Liquid Driers, etc.* Translated from the German by Charles Salter. Third English edition, 1917, revised and enlarged by H. B. Stocks, F. I. C., F. C. S. Scott, Greenwood & Son, London, England. D. Van Nostrand Company, 25 Park Place, New York, N. Y., American agents. 351 pp. \$5 net.

For many years this title has been highly esteemed by all who are seriously interested in the fabrication of fats obtained from the vegetable kingdom, but at present it is of more than ordinary interest because of our greatly increased interest in edible vegetable oils. The present edition is accurate up to September, 1917. While it might be urged that the statistical data in this book could be improved upon, especially for the American reader, it should also be borne in mind that quite apart from the economic features this book is practically indispensable to those who are making use of vegetable oils or are planning to do so. Probably nine-tenths of its pages are devoted to the technique of oil refining and cognate subjects. It is clearly written and well illustrated and it should find a ready sale among the host of manufacturers who are contemplating the use of any of the many vegetable oils which are so rapidly being added to our dietary.

HANDBOOK OF DOMESTIC SCIENCE AND HOUSEHOLD ARTS FOR USE IN ELEMENTARY SCHOOLS. A MANUAL FOR TEACHERS. With a Preface by Mrs. Ellen H. Richards of the Massachusetts Institute of Technology, and With Chapters Contributed by Other Well-Known Specialists. Edited by Lucy Langdon Williams Wilson, Ph. D., of the Philadelphia Normal School. The Macmillan Company, New York. 1913. 407 pp. \$1.00. Diagrams and tables.

The arts of the interior decorator and the cook, the dietician and the nurse, find common meeting ground in this book written for the grade teacher in the public schools. Sixteen chapters divided under the nine school months, from September to June, make up a profitable course of study which fulfills its purpose of being practicable for any teacher whose interest is not wanting, whatever her special training along house-keeping lines.

September begins the course with a chapter on the house beautiful—its construction in detail, its furnishing, and its art. Next come chapters on the kitchen, with a special section on the history and chemistry of fire, and on starchy foods and how to cook them. General chapters on foods, which include their chemistry, preparation and values, take the student through December. January takes up the advanced principles of cooking and foods like fish, oysters and salads. In

February the decoration, furnishing and care of the dining room, and breads, pastries and cakes complete the kitchen end of the course. Chapters on the bedroom and sick room, the laundry, and "household pests," bring the student in May to the timely subject of house cleaning. Mending and sewing follows, and the course is concluded with a chapter on "How to Turn an Ordinary Schoolroom Into a Workshop for the Study of Household Arts."

Although there are some statements in the book which rather surprise the reader who has always considered himself properly brought up, such as the statement following the description of an up-to-date bathroom, that a washstand is part of "the necessary furniture" of a bedroom—nevertheless the book if studied with discrimination has much value. Its great merit is that it is sure to be interesting to the children for whom its lessons are intended, combining as it does theory and demonstration, art and science.

MANUAL OF MILK PRODUCTS.—By W. A. Stocking, Professor of Dairy Industry at Cornell University, Ithaca, N. Y. The Macmillan Company, New York, N. Y. 578 pp. \$2 net.

During recent years much has been added to our knowledge of methods by which dairy products are handled. The very considerable literature on the subject, largely in the form of pamphlets, is widely scattered and not easily accessible. Professor Stocking's Manual was prepared for the purpose of bringing together the work of the best authorities in such form as to meet the needs of both students and men in commercial work. The book is made up of quotations, due credit being given in each case. As this Manual was published in August, 1917, it can be considered the latest comprehensive work on the subject, and should be of particular interest to those of us who from choice or necessity are content to have some one as well qualified as is the professor of dairying of Cornell University select for us all that is significant in the literature of the dairy industry.

Figures from the Preliminary Food Survey Covering Supply on Hand August 31, 1917, Issued by the U. S. Department of Agriculture.

The total commercial stocks of **wheat** were 75,000,000 bushels, or less than a two months' supply, while the commercial stocks of **flour** were about 12,000,000 barrels, representing approximately a six weeks' supply. The wheat supply was 37 per cent and the flour 75 per cent of the stocks on hand August 31, 1916. The elevators, mills, and wholesale grain dealers held 88.4 per cent of the commercial stocks of wheat reported for August 31, 1917, and 35.8 per cent of the total commercial stocks of flour reported for that date. In the case of flour, retail dealers held 24.9 per cent, bakers 20.3 per cent, wholesale grocers 9.7 per cent, and storage warehouses 5.3 per cent.

Commercial stocks of **canned salmon** were about 310,000,000 pounds, 18.4 per cent more than for August 31, 1916. Cannery reported the largest increase of stocks, 42 per cent; storage warehouses and wholesale dealers an increase of 9 and 20 per cent respectively; while retail stocks on August 31 were about the same for both years. Total cannery's stocks constituted 59 per cent of total stocks held in the United States. Storage warehouses reported about 12 per cent, wholesale dealers 18 per cent and retail dealers 9 per cent of the total stocks.

Total stocks of **salt fish** amounted to 115,000,000 pounds, an increase of about 6.2 per cent over the same date in 1916. The salt fish covered in the survey included both dried, smoked, and fish in brine. About 50 per cent were held by packers and wholesale fish dealers; 30 per cent by storage warehouses; 9 per cent by general wholesale dealers, and 4 per cent by retail dealers.

Commercial stocks of **salt beef** were 58,000,000 pounds, 33.9 per cent more than for the same date in 1916. Hold-

ings by meat packers constituted 68.1 per cent of total stocks and were followed in order by the holdings of storage warehouses, retail dealers, and wholesale dealers, which together reported more than 12 million pounds.

Total commercial stocks of **cured and salt pork** were 215,000,000 pounds, 5.5 per cent more than those held in 1916 on the same date. The meat packers reported 74.9 per cent of all stocks, while storage warehouses reported 11.3 per cent, wholesale dealers 7.4 per cent, and retail dealers 3.3 per cent of total stocks.

The total stocks of **ham, bacon and shoulders** were 488,000,000, practically the same as on the same date in 1916. This total includes commercial stocks of ham, bacon and shoulders, sweet pickled, dry salted or smoked. Meat packers held 85 per cent of the total stocks in the country; storage warehouses 6 per cent of the total stocks; and wholesalers and retailers 3 per cent each.

Report of Cold Storage Holdings February 1, 1918.

Reports from 464 cold storages show that their rooms contain 56,592,273 pounds of **American Cheese**, while on January 1, 452 storages reported 69,248,141 pounds.

Reports from 549 storages show that their rooms contain 2,202,808 barrels and 5,118,438 boxes of **Apples**.

Reports from 372 cold storages show that their rooms contain 24,780,358 pounds of **Creamery Butter**, while on January 1, 373 storages reported 47,069,946 pounds.

Reports from 140 cold storages show that their rooms contain 1,527,904 pounds of **Packing Stock Butter**, while on January 1, 125 storages reported 1,464,637 pounds.

Reports from 434 cold storages show that their rooms contain 199,511 cases of **Eggs**, while on January 1, 435 storages reported 1,228,673 cases.

Reports from 182 cold storages show that their rooms contain 12,025,069 pounds of **Frozen Eggs**, while on January 1, 172 storages reported 13,758,292 pounds.

The total stocks of **Frozen Beef** reported by 376 storages on February 1 amounted to 283,671,955 pounds, while the total stocks reported by 352 storages on January 1 amounted to 308,675,029 pounds.

The total stocks of **Cured Beef** reported by 363 storages on February 1 amounted to 37,891,674 pounds, while the total stocks reported by 341 storages on January 1 amounted to 37,634,520 pounds.

The total stocks of **Lamb and Mutton** reported by 204 storages on February 1 amounted to 6,317,522 pounds, while the total stocks reported by 191 storages on January 1 amounted to 7,073,157 pounds.

The total stocks of **Frozen Pork** reported by 343 storages on February 1 amounted to 60,310,940 pounds, while the total stocks reported by 311 storages on January 1 amounted to 39,649,536 pounds.

The total stocks of **Dry Salt Pork** reported by 434 storages on February 1 amounted to 330,862,776 pounds, while the total stocks reported by 392 storages on January 1 amounted to 243,470,758 pounds.

The total stocks of **Sweet Pickled Pork** reported by 515 storages on February 1 amounted to 311,861,852 pounds, while the total stocks reported by 478 storages on January 1 amounted to 256,256,813 pounds.

The total stocks of **Lard** reported by 525 storages on February 1 amounted to 57,540,222 pounds, while the total stocks reported by 488 storages on January 1 amounted to 51,257,040 pounds.

The total stocks of **Frozen Poultry** reported by 296 storages on February 1 amounted to 67,395,424 pounds, while the total stocks reported by 279 storages on January 1 amounted to 62,108,575 pounds.

The total stocks of **Broilers** reported by 191 storages on February 1 amounted to 8,216,019 pounds, while the total stocks reported by 169 storages on January 1 amounted to 8,611,701 pounds.

The total stocks of **Roasters** reported by 180 storages on February 1 amounted to 17,966,659 pounds, while the total stocks reported by 168 storages on January 1 amounted to 16,416,905 pounds.

The total stocks of **Fowls** reported by 196 storages on February 1 amounted to 15,076,360 pounds, while the total stocks reported by 179 storages on January 1 amounted to 13,036,964 pounds.

The total stocks of **Turkeys** reported by 226 storages on February 1 amounted to 10,475,410 pounds, while the total stocks reported by 201 storages on January 1 amounted to 4,510,048 pounds.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,252,029. Food compound. Henry J. Rhodes, Rochester, N. Y.

1,252,322. Machine for peeling tomatoes. Ambrose O. Cooley, Havre de Grace, Md.

1,252,390. Candy-starching device. Emil G. Bremer, Cincinnati, Ohio.

1,252,765. Machine for molding pieces of dough. Friedrich Aeschbach, Aarau, Switzerland.

1,252,822. Machine for shaping and cutting alimentary pastes. Filippo Poroli, Milan, Italy, assignor to Vitaliano Tommasini, same place.

1,252,865. Process of preserving fish and products thereof. Robert M. Thompson, Tacoma, Wash.

1,252,833. Gravity fruit-separating apparatus. George D. Parker, Riverside, Cal.

1,252,898. Cereal-cutter. Forest G. Gauntt, Fort Wayne, Ind., assignor to W. J. Savage Co., Knoxville, Tenn.

1,253,045. Process of treating dried fruit. Samuel Katzprowski, Berkeley, Cal.

1,253,343. Machine for dumping material. Alexander Brady, Newton Lower Falls, Mass., assignor to New England Confectionery Co., Boston, Mass.

1,253,347. Apparatus for treating liquids. Charles H. Campbell, New York, N. Y., assignor to Borden's Condensed Milk Co., same place.

1,253,443. Machine for molding dough and like plastic substances. John M. and Frank H. Van Houten, Beacon, N. Y., assignors to Dutchess Tool Co., same place.

1,253,444. Dough-advancing roll. Frank H. Van Houten, Beacon, N. Y., assignor to Dutchess Tool Co., same place.

1,253,640. Transfer mechanism. George H. Spear, North Reading, Mass., assignor to New England Confectionery Co., Boston, Mass.

1,253,664. Dumping-machine. Alexander Brady, Newton Lower Falls, Mass., assignor to New England Confectionery Co., Boston, Mass.

1,253,836. Dough-cutter. Sidney C. Katzinger, Chicago, Ill., assignor to Edward Katzinger Co., same place.

1,254,008. Wheat scalping and conditioning machine. Joseph H. Heishman, Port Huron, Mich.

1,254,129. Plant for the manufacture of coffee extract. Louis Etaix, Paris, France.

1,254,318. Baking-oven. William Fisch, Birmingham, Alabama.

1,254,423. Apparatus for evaporating milk. Joseph H. Mason, Prince Rupert, British Columbia, Canada.

1,254,457. Process for predetermining the time necessary for the fermentation or rising of dough for bread and the like. Alfred Watkins, Hereford, England.

1,254,494. Art of bread making. Augustine L. Frost, Chicago, Ill.

1,255,292. Process of making bread. David Chidlow, Ridgefield, Conn., assignor to James F. and William S. Strachan, Montreal, Quebec, Canada.

1,255,293. Process and machine for making bread. David Chidlow, Ridgefield, Conn., assignor to James F. and William S. Strachan, Montreal, Quebec, Canada.

1,255,350. Mechanism for drying macaroni. Luigi Tavani and Berardi Santirocco, West Chester, Pa.

1,255,483. Process of canning milk. Herman J. Startzenbach, Atlantic City, N. J.

1,255,624. Cake-coating machine. Barney J. Miracky, Little Ferry, N. J., assignor to National Biscuit Co., New York, N. Y.

1,255,638. Food composition. William W. Reed, Buffalo, N. Y.

1,255,816. Coffee compound. John D. Fletcher, Evansville, Ind.

1,256,017. Apparatus for treating flour. George J. Hicks, Saginaw, Mich.

1,256,304. Method of and means for sealing receptacles for food products. Allen J. Frick, Fleischmanns, N. Y.

1,256,495. Means for preserving food. Lawrence L. Kahn, San Francisco, Cal.

1,256,336. Attachment for coffee-roasters. Samuel Liberto, San Antonio, Tex.

Report of National Cannery Convention.

The Eleventh Annual Convention of the National Cannery Association was held in Boston from February 11th to February 16th. The following officers were elected: president, Henry Burden, Cazenovia, N. Y.; vice-president, Frank Gerber, Fremont, Mich.; secretary and treasurer, Frank E. Gorrell; executive committee: C. H. Bentley, California; Henry Burden, New York; W. F. Burrows, Illinois; H. L. Cannon, Delaware; E. B. Deming, Washington; Richard Dickinson, Illinois; W. H. Fromm, Wisconsin; Frank Gerber, Michigan; M. H. Hegerle, Minnesota; H. C. Hemingway, New York; J. W. Hutchinson, Wisconsin; George Kelley, Iowa; E. H. Kennedy, California; George B. Morrill, Maine; George N. Numsen, Maryland; S. B. Orr, Ohio; B. M. Pike, Maine; Ralph B. Polk, Indiana; W. R. Roach, Michigan; F. M. Shook, Ohio; C. S. Stevens, New Jersey; E. V. Stockham, Maryland; James R. Stokely, Tennessee; S. F. Taylor, New York; E. V. Virden, Iowa, and F. F. Wiley, Indiana.

A concise resume of the principal points considered by the Convention follows:

Four billion cans of food were packed in 1916.

Six billion cans of food were packed in 1917.

Seven billion cans of food expected to be packed in 1918.

The United States Army and Navy are now using approximately 100 carloads of canned food per day, consisting of the following:

275,000 cans condensed and evaporated milk.

40,000 cans corn.

25,000 cans beans.

125,000 cans tomatoes.

During the present year it is estimated that between five and six million cases of food will move to France from this country.

Judge Covington, a member of the Supreme Court of the District of Columbia—a man very close to the Administration—stated that the Government will call upon the canners of this country for the following proportions of their 1918 pack:

$\frac{1}{4}$ of all canned fruit packed.

$\frac{1}{4}$ of all canned beans packed.

$\frac{1}{3}$ of all canned tomatoes packed.

$\frac{1}{4}$ of all canned corn packed.

$\frac{1}{4}$ of all canned peas packed.

$\frac{1}{4}$ of all canned salmon packed.

$\frac{1}{3}$ of all canned condensed milk packed.

The Food Administration has secured railroad priority orders covering the movement of tin plate and cans, which are to be used in connection with the preserving and conserving of food. This means that 634 empty cars will be needed each week from January 1st to June 1st, for shipping tin plate and metal from the mines and factories to the can-makers. To move the cans to the packers after the cans are made will require 2500 cars every week from January 1st to June 1st.

It was freely stated that when the canning trade becomes accustomed to operating under the regulations of the Food Administration, they will not consider going back to the old basis.

The U. S. Food Administration is operative only during the period of the war, and at the very moment that peace is declared, the Food Administration is automatically dissolved. It is the consensus of opinion that the packers and canners and the trade in gen-

eral will petition the Government for a continuance of the Food Administration.

The canners, in general, feel that it is entirely too early to speak of futures, as to when opening prices will be announced, what they probably will be and so forth. There are numerous difficulties, such as cost of cases and labels, together with the labor situation, which the canner cannot foresee at this time.

A canner is restricted from selling more than 75 per cent of the estimated yield of acreage contracted for, or in excess of 75 per cent of his capacity.

The license system prevents a canner from buying raw products from a farmer or from a fisherman, when these raw products are already under contract at a lower price to another canner. The buyer of raw products must require the seller to state in writing that such goods are not under contract to another.

The canner must also sell goods manufactured and on hand for not more than a reasonable advance over cost, regardless of replacement value.

Prices on all "future sales" of licensed commodities are subject to revision by the U. S. Food Administration, if unreasonable. The Food Administration will prosecute profiteering only when the person in question is unable to explain why a certain price was charged. The Administration will not attempt to decide what a reasonable profit means, but puts the burden upon the seller, who must be prepared to show that the profit he received was "reasonable."

A Food Administration official spoke of the big Colorado crop of pinto beans and stated that these beans were rapidly taking the place of "Michigan whites." He suggested that the trade become familiar with them at once, because the crop of "Michigan whites" was short of the demand, and pinto beans were going to take their place.

A plan has now been practically approved by both the can companies and the large canners to stamp all food cans "U. S. A." This will acquaint the people of Europe with products packed in the United States through the medium of millions of cases of canned goods which are now being shipped to Europe.

The juice of the canned tomato has been found the most satisfactory means of quenching the thirst of the soldiers in the trenches, and is now being used extensively for that purpose. It is clean and wholesome, which cannot always be said of the drinking water of the trenches. The condensed milk sent to France will be used not only by the soldiers in the trenches: large quantities will go to save the thousands of starving babies in the warring countries.

A prominent wholesale grocer offered a resolution condemning the action of a certain large manufacturer, who has discontinued relations with brokers all over the country. This resolution approved of the method of selling through brokers, on account of its economy, and went on to state that a manufacturer who took advantage of the present situation caused by the war and discontinued relations with his brokers was doing so with monopolistic intent. It was argued that while a broker is a "middleman," so is a manufacturer, wholesaler and retailer. A broker makes a specialty of selling goods, and this method is regarded as the most economical. He is paid for his work only if and when the deal is consummated. Wherever a man specializes in one occupation, he naturally becomes more proficient in it and can do business at a lower cost.

Resales within the trade are disapproved by the Food Administration and no general exceptions have been made. It should be borne in mind that a lot of goods should not bear more than one wholesale profit nor more than one retail profit. If this point is not strictly lived up to, the buyer, the seller and the broker handling the transaction are liable to find themselves in serious trouble.

The fact that one jobber is out of goods and will lose trade to his competitors unless he is allowed to buy from another jobber, or that he would have to pay a higher price if he went direct to the packer for the goods in question does not itself constitute "reasonable justification" for resales in the eyes of the Food Administration, especially if such transactions place more than one wholesale profit on the goods purchased.

An optimistic feeling was expressed by every one that there will be no trouble in placing all of the canned foods packed during the coming season. After the tremendous amount of canned foods which will be taken by the Government is eliminated from the open market, the remainder will unquestionably be absorbed, especially in view of the era of prosperity in which we are now living. There is an unusual demand for canned foods, which will increase as the war progresses and the great mass of workmen become more prosperous because of the steady and continuous work being offered them.

Some Salient Features of the American Sugar Refining Company's Annual Report for 1917.

The cost of refining in the United States is on the highest basis known, but the price of sugar in this country is less than in foreign countries, and The American Sugar Refining Company's price for refined sugar has been generally lower than its competitors'—at times as much as a cent per pound. This appears from price charts which are submitted with the report.

Sugar has not kept pace with the advance in price of most commodities, but as appears from figures of the Bureau of Labor, the advance in sugar is very much less than the average advance in other articles such as milk, eggs, butter, bread and potatoes. Consumers have profited under a competitive system of large units as against results in other fields made up of small units.

The comparative cheapness of sugar has been doubtless one of the many contributing factors bringing about increased consumption last year. Sugar constitutes substantially 5.4 per cent of the average diet and furnishes 17.5 per cent of the total energy in the diet, and in refining requires a very small employment of labor.

In 20 years the percentage of sugar furnished by competitors has increased from 25 to nearly 50 per cent and the proportion supplied by the beet sugar companies advanced from a negligible percentage to nearly 25 per cent of the total consumption of the United States. A map is presented with the report which shows the beet and cane sugar producing areas throughout the world.

There is an excess refining capacity in this country of 1,000,000 tons. While the total exports for last year amounted to 451,221 tons, this was 250,000 tons less than for the preceding year. Nearly all of the sugar exported by the company went to the Allies.

News from Washington

Guaranteed Wheat Prices Announced.

The President has set the prices for the 1918 wheat crop at the principal interior primary markets. In a statement issued on February 25, he said: "To increase the price of wheat above the present figure, or to agitate any increase of price, would have the effect of very seriously hampering the large operations of the nation and of the Allies by causing the wheat of last year's crop to be withheld from the market. It would, moreover, dislocate all the present wage levels that have been established after much anxious discussion and would, therefore, create an industrial unrest which would be harmful to every industry in the country."

The guaranteed prices at the principal markets for No. 1 Northern spring wheat were set at:

Chicago, Ill., \$2.20 per bushel.

Kansas City, Mo., \$2.15 per bushel.

Minneapolis, Minn., \$2.17 per bushel.

New York, N. Y., \$2.28 per bushel.

Galveston, Tex., \$2.20 per bushel.

The guaranteed prices at the respective principal primary markets of all other grades of wheat established under the United States Grain Standards Act, approved August 11, 1916, were to be based on the above guaranteed prices and to bear just relation thereto.

Most Critical Food Situation in Our History During March and April.

Food Administrator Hoover issued the following statement on February 23:

In response to many inquiries I beg to say it is true that since the 1st of December we have fallen far behind our agreed food program with the Allies. By the end of February we will be short 45,000,000 bushels in cereal products which we undertook as our share of their supplies. We will also be short of the amount of meat and pork products that we were to deliver. This deficiency is due solely to the railway congestion since that date. The railway directorate since coming into control on January 1 has made effort to find remedy, but during the month of January the weather was insuperable, and although progress has been made since the 5th of February, the situation is the accumulation of three months' delays. The next 60 days will be the most critical period in our food history.

The simple fact is that the problem goes far deeper than supplies to the Allies. During the last three months we have far fallen behind in movement of foodstuffs from the farms to the consuming and storage centers. Up to the 1st of February less than 50 per cent of the normal ratio of corn has been moved, less than 80 per cent of the oats, and less than 60 per cent of the potatoes. From November 1 to January 1 we were short in the usual movement of grains and grain products into the terminals alone by over 120,000 carloads—over 120,000,000 bushels, and this further aggregated by similar shortage outside the terminals.

Furthermore, this year we have the largest percentage of soft corn in many years, and though we have a record crop of corn, a considerable portion of the soft corn will be lost by spoiling unless it can be moved in the next 60 days to the drying terminals. The least amount of grain that must be loaded for the next 60 days is 8,000,000 bushels per day, and we have not yet attained that. Less than this will solve neither the Allied nor our domestic situation.

We had about 130,000 carloads of potatoes on November 1 which should have been moved from the

principal producing centers, and up to the 1st of February we had moved about 28,000 carloads, while we should have moved over 50,000 in this period. The result is that potatoes are piled up spoiling in the producers' hands and the consuming centers have only been supplied by virtue of the summer gardens and other stores carried over from last year. There is a great deal of live stock which has been ready for the market for sometime, but is still held in the farmers' hands through inability to secure transportation. These cattle are eating their heads off without increasing their meat value and are only adding to the cost of the farmer and consuming the grain.

The effect of this delayed movement has been many fold:

First. To jeopardize the safety of a great deal of the soft corn and perishables, such as potatoes.

Second. The stricture in flow of distribution has entirely disturbed the price conditions in the country by practically suspending the law of supply and demand. The margins between the farmer and the consumer in many commodities were never wider than they are today because the consuming trades are under-supplied and the farmers compete for transportation. Prices of the coarse grains have reached unheard-of levels, while the limited transportation has diminished the farmers' returns.

Third. The cost of grains for feeding live stock has so increased to the feeders of finished cattle that they face serious losses. The costs of the dairying industries have necessarily greatly increased.

Fourth. Through the large consuming areas we have been living off reserves through the period of scant supplies. These reserves are in many sections approaching exhaustion.

Fifth. We have been unable to transport to seaboard the necessary foodstuffs for the Allies. This has not been due so much to the actual inability of the railways giving priority to foodstuffs for Allied shipping as it has been to bringing products from the farms to the terminal markets where it can be aggregated, prepared, and purchased by the Allies.

The economic ramifications of this whole delay in the movement of the national harvest are almost countless, and they present the most critical of situations, of which no solution exists but a continued expansion of the efforts of the Railway Administration in the movement of foodstuffs in every direction to the exclusion of much other commerce of the country.

The situation calls for every co-operation of the public—through the quick loading of cars, loading them to capacity, and discharging them quickly—and in every way reducing the tax on the railways. Co-operation can be given by reduction in consumption of foodstuffs, by the consumption of home and local stores to the exclusion so far as may be of transported articles. If every interest co-operates we shall supply the Allies and remedy the distribution of our abundant domestic supplies, for our farms are full of foodstuffs.

No effort is being spared to move Allied food as fast as it can be accumulated in the interior and today the railway directorate is arranging special trains to carry meat and packinghouse products from Chicago to load the waiting ships.

New Food Administrators for New Jersey and Nevada.

William S. Tyler, of Plainfield, has been approved by President Wilson as Federal Food Administrator for New Jersey, to succeed Ex.-Gov. James E. Fielder, resigned on account of pressure of other business. Mr. Tyler is a lawyer and a member of the state Board of Agriculture. He will give his entire time, as a volunteer, to this work.

H. A. Lemmon has been approved by President Wilson as Food Administrator for Nevada, to succeed Henry M. Hoyt, who resigned because of illness.

Mr. Lemmon's occupation in peace times is that of assistant to the manager of the local power company. He is now Secretary of the State Council of Defense, and is to give his entire time as a volunteer to war work.

Hearings on New Wheat Standards.

The Bureau of Markets, Department of Agriculture, has issued a notice, signed by Secretary Houston, of public hearings relating to tentative revision of the official grain standards of the United States for wheat. Eighteen public hearings were held throughout the United States during November and December. Advice and suggestions received through letters, in personal conferences, and at the hearings developed the fact that the standards for wheat, which were formulated for the requirements of trade under normal competitive conditions, should be revised to meet present marketing requirements.

The war has brought about fixed prices for wheat and the substantial elimination of competition in wheat transactions. It has also placed the milling and baking industries upon a new basis. Under present abnormal conditions mixtures of different classes of wheat, admixtures of rye, and other factors which influence color texture, and loaf volume of bread do not play nearly so important a part in the marketing of wheat as they did under prewar conditions. Regulation of storage, mixing, cleaning, and distribution of wheat has altered materially the relative importance of other factors.

A draft of proposed standards has been prepared, but before taking final action on these the Department wishes to receive the advice and suggestion of persons interested.

Accordingly five public hearings will be held as follows:

March 14, Bourse Building, Philadelphia, Pa.

March 16, Board of Trade Building, Indianapolis, Ind.

March 18, Coates House, Kansas City, Mo.

March 18, Chamber of Commerce, Spokane, Wash.

March 21, Court House, Minneapolis, Minn.

All persons interested are invited to be present at any of these hearings.

Smaller Loaf Permitted.

To enable the people of the United States to make still further savings of the wheat flour which is now so vital to the success of the Allies, the Food Administration has permitted bakers to offer for sale a three-quarter pound loaf. Heretofore, the smallest loaf allowed under the baking regulations was that weighing one pound. The new unit will not displace the one-pound loaf but may be baked in addition to it and the other permitted weights.

Investigations recently conducted by the Food Administration led to the conviction that in several of the large cities of the country there are many families whose daily consumption of bread is less than one pound.

Individual loaves of the new unit may weigh three-quarters of an ounce under or three-quarters of an ounce over the prescribed weight, but an average of twenty-five loaves must weigh not less than twelve ounces. Loaves of this weight may be baked either singly or in twin form, and their manufacture is subject to the same rules as to ingredients as all other bread. The price of the three-quarter-pound loaf should be relatively lower than that of the one-pound.

Small Bakers May Come Under License.

Although bakers who use less than three barrels of flour and meal per month are not required to secure a Food Administration license, a recent rule gives them the right to come under license. This applies not only to commercial bakers, but to all hotels, restaurants and boarding houses. Those who procure licenses will be entitled to procure wheat flour for baking bread or rolls on the basis of one pound of substitutes for every four pounds of wheat flour. Those who do not secure licenses and thus subject themselves to the United States Food Administration's rules and regulations must purchase the usual one pound of substitutes for each pound of wheat flour.

Rye Flour as a Substitute.

Bakers may continue to use rye flour as a wheat flour substitute in Victory bread until March 31, but not beyond that date. In the baking regulations issued February 1, the use of rye flour as a substitute was limited to the period ending March 3. The decision to grant an extension was reached because in some sections of the country where other substitutes are not yet available, rye flour can be secured.

Sale of Mixed Flour.

Mixed flours containing less than 50 per cent of wheat flour may be sold without substitutes.

Special rules governing the sales of other mixed flours have been promulgated. Retailers are forbidden to sell mixed flours containing more than 50 per cent of wheat flour to any person unless the amount of wheat flour substitutes sold is sufficient to make the total amount of such substitutes, including those in mixed flour, equal to the total amount of wheat flour in the mixed flour. For instance, if any mixed flour is purchased containing 60 per cent wheat flour and 40 per cent substitutes, it is necessary that an additional 20 per cent of substitutes be purchased. This brings it to the basis of one pound of substitute for each pound of wheat flour.

The other exceptions to this basis of purchase concern graham flour and whole wheat flour, which may be sold at a ratio of three pounds to five pounds of wheat flour; there is a special exception, which may be granted upon application showing the necessity, in the case of specially-prepared infants' and invalids' food containing flour.

"Victory" Again.

"Victory" has now been twice presented to the U. S. Food Administration, for unrestricted use in designating certain varieties of wheat-saving breads and bakery products. The National Biscuit Company has made a formal presentation of all rights to the name.

so far as it covers crackers, biscuits and cakes. The National Biscuit Company has used the name since 1901, after registering it in the United States Patent Office, to cover practically all of its products.

When the company learned that the Food Administration wished to use the name "Victory" to designate many forms of wheat conserving products, it took steps to give the Government full privileges to use the word "Victory." This was done on its own initiative as a patriotic service. Final assignment was made when R. E. Tomlinson, president of the big corporation, sent a personal representative to Washington to turn over all rights to "Victory."

The name had already been registered, so far as bread is concerned, by the Schulze Baking Company of Chicago, which assigned it to the Government at the request of the Food Administration.

Fifty-fifty Ruling Not New.

It is an interesting fact that the "fifty-fifty" cereal ruling does not bring an essentially new practice into either the grocery or the kitchen. In the South wheat is probably the real substitute; in the West and Middle West the proportion is about 75 per cent wheat to 25 per cent substitutes; in the East the ratio is about 80 per cent wheat flour to 20 per cent substitutes.

Sugar for Essential Food Products.

In reply to many inquiries that are being received regarding sugar supplies for manufacturers of essential food products, such manufacturers are advised that they will be able to obtain their full necessary requirements of sugar for manufacturing purposes during the coming season. This applies particularly to the packers of fruit, condensed milk and vegetables for the preservation of which sugar may be necessary, as well as to housewives for preserving purposes.

Benefit of Sugar "Rebates" Should Go to the Consumer.

The Food Administration has been informed that sugar refiners are offering a special allowance or extra compensation to distributors by reason of the special services said to be performed by distributors' salesmen or as an equivalent of advertising expense.

The announcements of the Food Administration under dates of October 13, 1917, and February 1, 1918, made it quite clear that the Food Administration dis-

countenanced sales of sugar by wholesalers and jobbers at an advance over delivered cost of more than 15 cents to 25 cents per 100 pounds. Any rebates or allowances must be deducted by the wholesaler or jobber in determining his delivered cost so that his gross margin on sugar will in no case exceed 15 cents to 25 cents per 100 pounds as expressed in the earlier announcements just mentioned.

In other words, it is imperative that the benefit of any special payments, rebates, or allowances be carried through to the consumer.

Candy and Conservation.

Is it wrong to make and eat candy in war time? Can we find in this class of food substitutes for sugar, just as we are finding substitutes for other foods that are being needed abroad? With every desire to be patriotic those who eat candy are uncertain whether it is wrong or right, because this part of the food program has not received as much emphasis as that part touching grains and meats.

The Food Administration says it is possible to eat candy and satisfy one's sweet tooth, and still be a patriot if care is used in selecting the kinds of candy that contain a minimum rather than a maximum amount of sugar.

A reasonable amount of candy is desirable in the diet. There are at least four groups of candy that contain a minimum amount of sugar and also other pure and wholesome ingredients which are plentiful.

Group 1: Chocolate coated candies, with nut and fruit centers, especially the old-fashioned chocolate creams with the bitter-sweet coating and uncoated candies such as nougatines, Turkish pastes and similar varieties. There is an abundance of chocolate; it is pure and wholesome and has high food value.

Group 2: "Hard boiled candies," such as lemon drops, stick candy, fruit tablets, peanut bars, peanut brittle, glace nuts and the like. In this group may also be placed molasses candies, such as taffies and kisses.

Group 3: Marshmallows and similar candy. They may be eaten plain, toasted, dipped in chocolate, rolled in cocoanut and in many other palatable forms, also popcorn confections.

Group 4: Gum drops, jellies, jelly beans and the like—a wide variety of candies made from pure and wholesome ingredients and containing a minimum amount of sugar.

Rules Limiting Profits of Traders in Cold Storage Eggs and Frozen Poultry.

The Food Administration has promulgated two series of rules and regulations, effective March 2, which limit the trade profits and otherwise regulate the distribution of frozen poultry and cold storage eggs. These rules are the result of long and careful study of conditions, present and future, in the poultry and egg industries, extending from production on small farms and in large poultry plants, through distribution with its many ramifications to the consumer who buys in village and city markets. In this study conferences have been held with representatives of all classes interested, and general approval of the plans has been secured in advance from those most affected by the limitations imposed.

The Food Administration believes that the rules and regulations will benefit all classes. They will stabilize the industries, place transactions on a just merchandising basis, allow legitimate competition, but restrict opportunities for unfair, price-raising speculation, aid in securing prompt, regular and efficient distribution, eliminate unnecessary trading, and otherwise discourage practices that, in the past, have been reflected in abnormally high prices to consumers.

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At the same time, the limits of maximum price advances allowed have been placed at points that will maintain all necessary distributing agencies and warrant payment to producers of satisfactory prices for poultry and eggs for storage. These rules do not apply to any trading in poultry not at some time in a cold-storage warehouse or to trading in fresh eggs. They do not, in themselves, place any restriction upon the prices to be paid for poultry or eggs intended for storage. They merely limit the profits that can be made on any transaction after the first purchase until the poultry or eggs are in the retailer's hands, and are intended to reduce the number of transactions to the economic minimum.

The rules and regulations provide, in brief: that the original storer of poultry in a cold-storage warehouse may be allowed an advance over cost not to exceed 6 per cent; that a commission merchant selling frozen poultry for an original storer may receive a commission not exceeding 5 per cent on the cost of the poultry; and that a wholesaler, a jobber, or a supplier of hotels and institutions may receive an advance over the cost to each dealer in such frozen poultry of 5 per cent, 10 per cent, or 15 per cent, respectively.

The storer of eggs in a cold-storage warehouse may be allowed an advance of 6 per cent over cost; a commission merchant selling storage eggs for an original storer may receive a commission not exceeding 4 per cent; a wholesaler may receive an advance of 4 per cent; and a jobber selling in original packages may receive an advance of 5 per cent. In selling candled storage eggs the actual net candling loss is considered part of the cost; and jobbers, suppliers of hotels and institutions, and retailers operating under license are allowed advances of 10 per cent, 12 per cent, and 15 per cent, respectively, over cost. With both poultry and eggs trading between dealers in the same class is strictly limited, and commissions and brokerage, except as specifically allowed, must be paid from the advances in cost, not added to them.

It is expected by the Food Administration that most of the trading in frozen poultry will be at smaller margins of profit than those given above. These maximums are intended to cover the most expensive methods of distribution in the several classes; and no attempt should be made to increase the number of distributive processes or to secure the maximum advances, even where competition makes it possible to do so, for less expensive methods of distribution. Reduction in the number of distributive steps has ever been kept in mind in formulating these rules.

Result of Meatless Days.

From the first of November, when the meatless day was instituted, to the end of February, the estimated slaughter of cattle in the United States amounted to a minimum of 3,800,000,000 pounds of beef. The exports of beef to the Allies during this period reached approximately 165,000,000 pounds, or less than 5 per cent of the total. This is considerably less than it is highly desirable that we should have exported to them. The stocks of beef in the cold storage warehouses were approximately the same at the end of February as at the end of October, and we could have done somewhat better had there been more cars available.

The average prewar export of beef for four months was about 25,000,000 pounds and therefore the amount of conservation realized has been roughly 140,000,000 pounds.

During the same period of four months, since November 1, the estimated production of pork products is approximately 5,500,000,000 pounds. Of this we had, by the end of February, exported approximately 400,000,000 pounds. The prewar average rate of exports would have amounted to approximately 200,000,-

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ooo pounds for such a period. It is important to note that the consumption of beef and pork products for the United States averaged 11 pounds per capita per month under prewar conditions and that they averaged 12.25 pounds per month per capita in 1917—an increase of about 10 per cent—whereas the numbers of our cattle and hogs have not increased in this ratio per capita. In other words, our national consumption has increased at a faster rate than our production and, therefore, without the meatless day we would not have been in position to have exported as much as even the prewar average amounts. Therefore the actual saving is more than is apparent by the comparison of direct figures.

That the exports are absolutely vital needs no proof further than the statement of the ration at present in force in Europe among the Allies, which has been reduced to approximately 1 pound of meats of all kinds per week, per capita, or less than 30 per cent of the present American consumption, and it is today at so low a figure as to tend to diminish the morale and resistance of the Allies.

The situation in mutton and lamb is somewhat different. We do not export this kind of meat to the Allies. On the other hand, the Food Administration's recommendation that it should not be used on the voluntary meatless Tuesday was simply because if its use were confined to the other six days it would displace a certain amount of beef and pork, whereas if it were left open to eat mutton and lamb on Tuesday an equivalent amount of beef and pork would be consumed on other days in the week.

However, the prohibition on mutton and lamb has now been temporarily removed, so that the country can concentrate on saving wheat, for which there is a more crying need than ever before.

"Rule 1a" and the Cannerymen.

Perhaps the point of chief interest before the canners at their national convention was the ruling of the Food Administration regarding "future" orders.

The whole problem centered around "rule 1a," recently promulgated from Washington, which reads as follows:

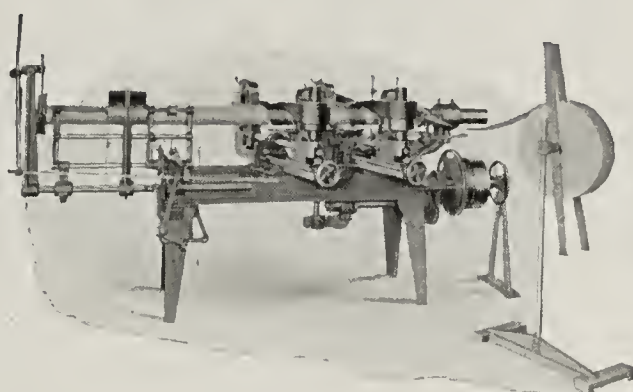
Rule 1a.—The licensee shall not quote for future packing or delivery or sell any canned peas, canned corn, canned tomatoes, canned salmon, or canned sardines, not manufactured and on hand, unless the price fixed in the contract is subject to revision by the United States Food Administration if it represents more than a reasonable advance over the average cost of the season's pack of such goods.

The canners are not in sympathy with profiteers and they are standing strongly behind the Food Administration, but this ruling places them in a peculiar predicament, as it is well known that most canned goods are sold on future orders and long before the "average costs" are known or even the raw materials planted. How, therefore, to sell goods at a price which will be revised months afterward is a problem.

A conference was held with the Food Administration in an effort to secure a modification of the rule. Although the only written concession obtained by the canners was a slight change in wording, the Food Administration assured them that no apprehension need be felt except where unfair practices were obviously involved. Rule 1a now reads:

* * * unless the price to be fixed in the contract is subject to revision by the United States Food Administration if it is unreasonable. This rule shall not apply to Army and Navy requirements.

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Because of the delay incident to further consideration given this rule, the time for the return of the canning reports has been extended from February 15 to March 15.

Canners Advised to Hold Stocks for War Purposes.

All canners have been advised by the Food Administration to hold for war purposes until properly advised such quantities of canned corn, peas, tomatoes, string beans, and salmon as they may have on hand.

Reports of such holdings must be made at once to the Division of Co-ordination of Purchase, United States Food Administration, Washington, D. C. Such reports are separate from those to be submitted before March 15, 1918, to the Canned Foods Division of the Food Administration. Canners who have no stocks of these commodities are required to report indicating this fact.

It is stated that quantities not wanted will be released promptly within a few days after receipt of reports.

The reason for the Food Administration's action is that since the Food Administration is charged with the duty of helping to provide our Army and Navy and our associates in the war with these goods it is desired to make a quick survey of the canned goods still in hands of canners, so that an accurate knowledge of the stocks of such goods on hand may be obtained for the contingency that not enough to meet all needs are obtained through voluntary offerings.

Rules for Cheese Storage Announced.

In a recent message to the cheese trade the Food Administration called attention to the requirement that storage cheese,

like other perishable foodstuffs, must be marketed before the next production season begins. It has now been decided that June 15 shall mark the official beginning of the productive season of 1918. Accordingly, all cheese now in storage must be marketed before that date unless a special extension is obtained from the Food Administration.

Permits to extend the storage season will be granted to those licensees whose statement of the purpose of longer holding shows that the extension is desirable and useful. No permits will be granted where the purpose of further holding is evidently speculative.

Agreement on Eggs and Poultry.

Latest news from Washington is to the effect that definite agreements regulating the price and distribution of eggs and poultry, both fresh and stored, are expected to be worked out as a result of conferences between the United States Food Administration and representatives of the trade. After hearing the views of several experts who are serving the Food Administration, men representing more than thirty of the big shipping and distributing interests appointed two big general committees to map out definite agreements—one representing the egg interests, the other the poultry. If these are acceptable to the Food Administration, they will voluntarily be put in force.

Chief among the reforms desired by the Food Administration are the elimination of unnecessary handling and the abolition of speculation, both of which will have a direct effect upon prices. A sharp differentiation will probably be made between the distribution of fresh and for cold storage eggs. The cold storage product represents what may be considered as practically a non-perishable product and the Food Administration wishes its sale to be governed along the same general lines followed in the sale of other non-

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perishables—price to be based upon purchase price, without consideration of replacement value. Each sale should be regarded as a separate transaction, to be governed by a regulation prohibiting more than a normal profit on the individual transaction. Fresh eggs and poultry are regarded as belonging in an entirely different category, and the profits may be gauged on the seasonal business, rather than on separate transactions.

Wholesale Prices Fixed for Storage Creamery Butter.

Wholesale prices for storage creamery butter have been announced by the United States Food Administration for New York and Chicago, the New York prices to govern other points in seaboard territory. The new scale has been established with the voluntary co-operation of the butter trade, and all exchanges notified to observe the following wholesale quotations:

New York: 47 cents a pound "for the remainder of the season." This means about two months, when most of the present storage creamery butter will have been released. This price will remain unchanged, without allowances for accumulating storage charges.

Chicago: from 45½ cents a pound on February 1, the price will be advanced one-fourth of a cent on the 1st and 15th of each month until practically all creamery butter is released from storage. This increase is designed to compensate for storage expenses.

The new scale of prices is based on a careful investigation of the cost of storage butter and allows a reasonable profit for the holders. The usual trade differentials are to be allowed the various classes of handlers.

Stable prices at these two principal butter centers under voluntary agreements with principal butter exchanges is regarded as sufficient assurance that corresponding prices will rule throughout the country.

To Prosecute Shippers of Adulterated Canned Goods.

Immediate action against shippers of canned sauerkraut and other canned foods which are adulterated with excessive brine or liquid will be taken by the U. S. Department of Agriculture. Certain packers of canned sauerkraut are putting on the market a product containing an excessive amount of brine for which the consumer pays sauerkraut prices, according to a statement from the Bureau of Chemistry. The interstate shipment of canned sauerkraut of this quality is regarded as a violation of the Federal Food and Drugs Act, a fact well known to the canning trade. Shipment of any canned food containing excessive liquid likewise is regarded as a violation of the law. Canners generally recognize this fact, the statement adds, and it is seldom necessary to make objection to canned goods on that account.

The Department has announced on numerous occasions that in packing foods the cans should be as full of the product as is practical for packing and processing and should contain only sufficient liquid to fill the vacant spaces in the can and cover the food. Foods packed in excessive liquid not only are a cheat to the consumer and a violation of the Food and Drugs Act, but they cause an improper utilization of tin cans as well as of valuable space in freight cars and other common carriers.

The U.S. Food Administration says: "Save Fats"

AND IT ADDS: "*To save does not mean to do without. Use vegetable fats instead of lard and butter in your cooking.*"

THAT is the direct appeal of your Government. It calls for no sacrifice on your part.

—*No sacrifice of nutriment* because vegetable fats are rich, wholesome and pure.

—*No sacrifice in economy* because vegetable fats cost less than butter or lard.

The only change you are asked to make is a *slight change in the way you cook*—the shortening you use.

Fortunately, the country has right at hand an abundant supply of nutritious vegetable fats—of which Cottolene is a well-known and dependable example.

The change from lard and butter to vegetable fats is both simple and patriotic. Cottolene meets the needs of wholesome cooking, the requirements of economy, the wishes of the Government.

And what is the reason for the Government requirements? Simply this:

"Pork, ham, bacon, lard, condensed milk and butter can be shipped in concentrated space"—to feed the under-nourished women and children in stricken countries—to feed our own fighting men and the men of our Allies who are fighting in our defense.

* * *

WITH these compelling facts in mind, is it not a clear duty to put patriotism above cooking customs and use the nutritious, economical vegetable fats which nature has abundantly supplied?

Make your kitchen a patriotic kitchen and remember as you cook—every ounce of vegetable fat you use instead of lard and butter may mean saving the life of someone somewhere in the world.

THE N.K. FAIRBANK COMPANY

Cottolene

Patriotic Shortening



Acid Calcium Phosphate
 Acid Ammonium Phosphate
 Liquid Acid Phosphate
 Baking Powder Materials
 Phosphoric Acid
 Epsom Salts U. S. P.
 Oxalic Acid

Correspondence solicited

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Largest Manufacturers



He Profits Most!

who serves best — and to “serve best” one must dig down beneath the surface.

Thousands of users of paper — and still other thousands who OUGHT TO BE USERS — haven't scratched the surface benefits of the idea, “Save with paper.”

DIG INTO THIS!

Use vegetable parchment and waxed papers to save perishable products, to save tin (now used for containers), to save time and to save money. There's money in this—if you'll strike your spade into the fertile ground and GET IT. Drop us a line.

We'll put the PRATTLE on your hook.

KALAMAZOO VEGETABLE PARCHMENT CO.

Kalamazoo, Michigan

Convention of Retail Grocers.

Because of the very great congestion in Washington, due to war conditions, the Twentieth Annual Convention of the National Association of Retail Grocers, which was scheduled to take place at Washington in May, will be held in Chicago May 20 to 23. It is to be a war convention from beginning to end, and even the convention banquet will be turned into an inexpensive “trench dinner.”

Dr. Randall on Food Standards Committee.

Dairy and Food Commissioner Foust of Pennsylvania has appointed Dr. Wyatt W. Randall, chemist of the State Department of Health of Maryland, as a member of the Joint Committee of Food Standards of the National Association of American Dairy, Food and Drug Officials, of which he is President. Dr. Randall succeeds Dr. David Kline of Chicago, who resigned to enter the Army.

Commissioner Dinsmore Has U. S. Commission.

Sanford C. Dinsmore, commissioner of foods and drugs in Nevada, received a commission as First Lieutenant in the United States Sanitary Corps, January 1, 1918.

Lieutenant Dinsmore was first ordered to Washington, then to Camp Cody, and is now stationed at Camp Kearney, California. His duties are along the line of sanitary inspections and he makes daily inspections of all foodstuffs used at the camp.

St. Louis Patriotic Food Show.

A Patriotic Food Show was held in the Coliseum at St. Louis from February 2 to 13. An attendance of 50,000—in spite of the street-car strike—made the Show a splendid contribution to the cause of food conservation. Through the co-operation of the Food Administration—federal, state and city, of the Departments of Agriculture and Commerce, and of Missouri University and the St. Louis public schools, an extensive educational program was provided for every hour of the day. A pageant entitled, “Plenty, Waste and Want,” was beautifully staged by a cast of 250 persons, who represented all classes of the population, and it proved a spectacle of great inspirational value.

Creamery Butter Manufacturers Meet.

The Tenth Annual Meeting of the American Association of Creamery Butter Manufacturers was held February 19 at the Hotel La Salle, Chicago. The following officers were re-elected: W. W. Marple, president; H. S. Johnson, treasurer; G. L. McKay, secretary.

Co-operation with the Food Administration was strongly endorsed. A steady improvement in methods and standards was urged. Dr. H. A. Harding spoke on “The Cost of Milk Production”; Dr. C. W. Larson of the U. S. Dairy Division presented up-to-date statistics on production and manufacturing; Prof. Mortensen of Iowa State College described the success of Denmark and Australia in developing reputations for a superior quality of butter on the English market and urged a similar campaign in the country; Dr. Hunziker of the Blue Valley Creamery Company spoke on the reduction of acidity in sour cream as a means for butter improvement; Mr. Creasy of the National Dairy Union discussed the oleomargarine situation; and Mr. T. A. Bowman read a paper on the can situation.

Buhl Patented Dryer for Drying

Whole or Skimmed Milk, Buttermilk, Beef Blood, Whole Eggs, Whites of Eggs, Brewers' Yeast, Dyewood and Tannin Extracts, Glue and Gelatine Solutions, Etc.

The Buhl process of desiccation is based upon principles scientifically sound and absolutely new which make it possible to dry solutions which it has hitherto been impossible to dry successfully. The process consists in spraying the liquid into a superheated atmosphere of its own vapor and is covered by patents of the broadest nature. Food control officials who have posted themselves on this process are most enthusiastic in its praise.

As the process in no way changes the chemical composition of the original substance the product obtained is far superior to any now on the market.

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"SPECIAL" OLEOMARGARINE

The Taste Is
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Where
Quality and
Economy Meet

Gives better satisfaction than 75 per cent of butter used. Cost one-third less. Try it and be convinced. Order a package from your dealer.

Churned by

WM. J. MOXLEY, Inc., Chicago

New Tea Board Appointed.

New members of the Board of Tea Experts to serve for the coming year have been announced by the Treasury Department. The new board is constituted as follows: J. J. McNamara, New York; H. G. Woodworth, Boston; Arthur T. Hallyer, Chicago; C. E. Wyman, St. Paul, Minn.; E. R. Rogers, Tacoma, Wash.; George W. Caswell, San Francisco, and George F. Mitchell, Charleston, S. C. (supervising tea examiner, Treasury Department).

The first meeting was held February 11, at the United States Appraiser's Stores, New York, at which time the tea standards which go into effect on May 1 by which the purity, quality and fitness for consumption of all teas entering the United States are measured were selected and recommended to the Secretary of the Treasury for approval.

Three Big Soft Drink Concerns Combine.

The Northwestern concerns manufacturing Loju, Phez and Applejin have consolidated under the name of the Pheasant Northwest Products Co., with headquarters at Salem, Ore. Branch offices are to be located at New York City, Chicago, Atlanta, Kansas City, Denver, Dallas and San Francisco. Large advertising will be done during the coming season.

Hires and Wildi Milk Companies Consolidate.

Announcement has been made that the directors of the Hires Condensed Milk Company of Philadelphia have chosen John F. Montgomery president and B. F. Amos vice-president. Mr. Montgomery and Mr. Amos will continue to act as president and vice-president, respectively, of the John Wildi Evaporated Milk Company of Columbus, Ohio. The two companies will be continued as separate corporations, although the plants will be operated as one unit.

Canada Prohibits Wheat Middlings.

The Canadian Food Control Board has issued rulings which prohibit the manufacture of Cream of Wheat, farina and similar products, in the making of which there is an excessive waste of wheat parts. An exception is made in the case of manufacture for invalids and children and licenses will be issued for such manufacture when the proper application is made to the Food Control Board.

The Food Board has thought it best to place the ban on those products which use only part of the wheat berry and thus cause an excessive waste of wheat parts. It is still a probability that cereals made from wheat may be prohibited entirely. As it is, all wheat products are now substituting 25 per cent of other grains. The Shredded Wheat Company, in lieu of the substitution, is limited to 75 per cent of its 1917 output. It is impossible to introduce other grains into the company's process. But in the case of wheat middlings their manufacture is absolutely prohibited. This must not be mistaken for a specific ban against the advertised "Cream of Wheat." The package of the latter can still be sold, but there will be no further supplies when present stocks are exhausted.

The manufacturers of Ralston Wheat Food have changed their formula to include 25 per cent of "grains other than wheat." The name "Ralston's Wheat Food" is being retained and the Canadian makers of this product claim that the new formula is a blessing in disguise, for the addition of the other grains has improved the product and made it more popular with the public.

SAFE MILK

— *For the Children*



Carnation Milk

From Contented Cows



FREE RECIPE BOOK—SEND POST-CARD TODAY

containing one hundred choice and tested recipes—many for meatless and wheatless dishes—sauces, gravies, puddings, cocoa, etc. Free to interested housewives.

CARNATION MILK PRODUCTS CO.
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"Remember—Your Grocer can supply you with Carnation"

Food saving must begin with buying

THE Housewives of America are the army behind the army. They are trying to do the greatest work ever done in any war by women—to save food every day that our armies may be fed and our victories may be won.

The problem of the housewife is not simple. She can and does observe meatless and wheatless days, and she can and does cut down on the quantity of food used. She will not waste food.

But she is entitled to be protected against waste in buying; she is entitled to organized co-operation that will supply her home with food products which will make real saving possible.

Our institution is organized today to give the housewife just that help. Every Wilson food product is selected, handled and prepared with the respect due that which is to be served in your home. It is satisfactory and economical.

More than that, we can give you personal advice and suggestions—tell you how to buy economically, how to cook economically—how to save in the kitchen and on your table.

Write me and ask for the information you wish. There is nothing more important in our service to our country than to help you in the service you give it in your home. Our Institution is the Intelligence Department of the Army Behind the Army, and our facilities are cheerfully and willingly at your command.

John E. Wilson
President, Wilson & Co.



Be Sure to Buy

WARD'S OATEN-LOAF BREAD

the first of our new food conservation loaves. Contains 80 per cent wheat, maximum, and 20 per cent selected oats, minimum. A true wheat saving loaf with a distinctive and palatable flavor. Excellent keeping qualities. Makes delicious toast.

WARD experience, skill and scientific baking methods guarantee its fine quality.

IN ONE POUND WRAPPED
LOAVES

WARD BAKING CO.

War a Benefit to French Co-operative Organizations.

The co-operative movement in France, which was in a rather critical position at the outbreak of hostilities, has made remarkable progress since 1914. Far from being detrimentally affected by the war, the co-operative societies throughout France have extended the scope of their operations. While the so-called "mutual benefit societies," trade unions, and similar organizations have found their activities seriously hampered by a state of war, the consumers' co-operative societies have witnessed a rapid growth in their membership and in the extent of their transactions. The shortage of foodstuffs and the general advance in prices have attracted to the co-operative shops increasing numbers of purchasers, even those belonging to the so-called middle classes seeking to economize.

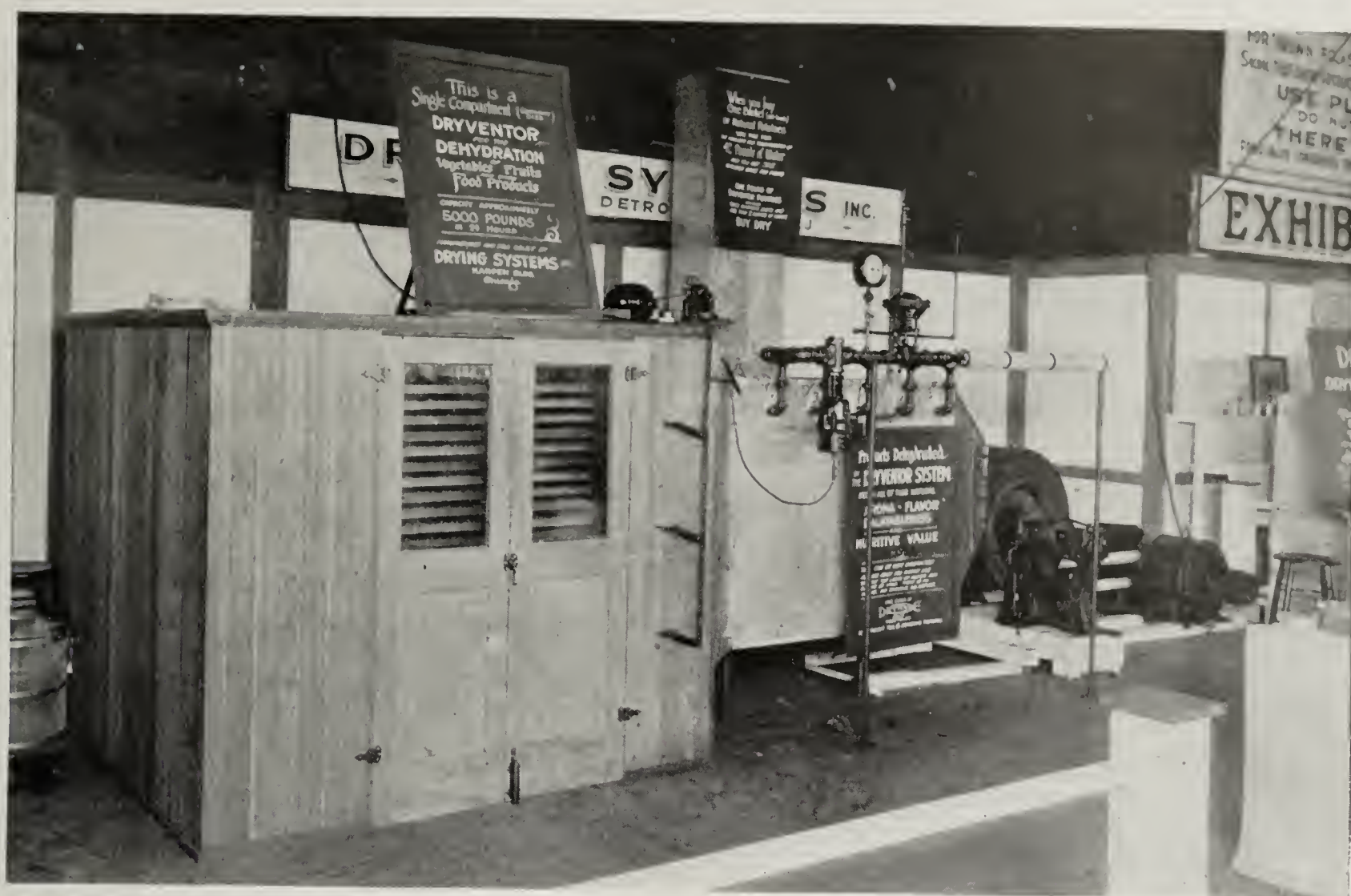
In the invaded regions of France the co-operative stores have generally been spared by the enemy, and have served as places of refuge for the local population, somewhat like the churches in the wars of the Middle Ages. Even in Belgium the membership of these societies has grown considerably, although the rapid exhaustion of their stocks of merchandise and of their supply of funds has placed them in a difficult situation. Even among the refugees co-operative stores have been organized, as among the Belgian refugees in Holland at the camp of Gaasterland.

In France the outbreak of the war found the societies in the midst of a crisis following the reconciliation of two rival groups of organizations after 18 years of conflict. Moreover, the region of France which first suffered invasion was precisely the part of the republic in which co-operative societies were most numerous and most prosperous. Throughout France as a whole the membership and influence of these societies has increased more rapidly during the war than during the corresponding period preceding the war.

In Paris the city government has made financial advances to and worked in conjunction with the societies, particularly in connection with the sale of frozen meat. The co-operative societies, moreover, have taken over the innumerable branches of the Maggi firm for the sale of milk, these establishments having been sacked in the first days of the war because of their supposed German ownership. They have also obtained means from the military authorities for the sale of their products at the front, and have thus helped to save the troops from being exploited by small dealers (the so-called "merchants"). They have also created workshops for the unemployed and have taken an active part in relief work, particularly in the care of war orphans.

A few months ago, moreover, they organized an international congress of co-operative societies at Paris for the purpose of determining what economic measures should be taken at the close of the war.

In a recent speech at Geneva the former French minister of munitions, Albert Thomas, who is also one of the leading officials of the French Association of Co-operative Societies, stated that the co-operative societies solved for France the problem of providing a sufficient food supply for numerous localities in which there had been an extraordinary increase in the population through the influx of great numbers of munition workers.



At the Chicago Patriotic Food Show

Nearly One Hundred Thousand People GRASPED THE SIGNIFICANCE of the DRYVENTOR

The exhibit of a standard single-compartment (Community Size) DRYVENTOR in actual operation, demonstrated to thousands of visitors the real significance of dehydration. Potatoes, onions, carrots, cabbage, turnips, apples, and other products were prepared and dehydrated in the visitor's presence. The dehydrated products, reduced in bulk from 40 to 60 per cent and in weight from 60 to 90 per cent, were cooked in the demonstrating section and were tasted by hundreds of visitors who pronounced the DRYVENTOR product equal or superior to the fresh vegetable or fruit.

Besides the actual demonstration of the process and the product, opportunity was afforded to broaden the visitor's appreciation of dehydration as a means for preventing the loss of surplus production, and for preserving perishable products in a palatable and nutritious form. By explaining that the DRYVENTOR SYSTEM decreases the consumer's cost because it decreases loss and marketing expense, the enthusiastic co-operation of the visiting public was enlisted and a ready market assured. This market will grow because the housewife has discovered the economy, convenience, and quality of the DRYVENTOR product.

This company manufactures and installs DRYVENTOR plants of any capacity.

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SAMPLES GRATIS****GRANULATED BORIC ACID**

Will dissolve more readily than any form hitherto introduced. When ordering, specify

**20 MULE TEAM GRANULATED BORIC ACID
U. S. P.****PACIFIC COAST BORAX COMPANY****New York****Chicago****Oakland****DR. PRICE'S VANILLA**

Is Made From the

Finest Mexican Vanilla Beans

The same high quality is found in Price's

Lemon, Orange, Raspberry and Strawberry**PURE FRUIT EXTRACTS****Price Flavoring Extract Co.****CHICAGO, ILL.****The Copra Situation**

The past year has shown great advancement in the manufacturing of cocoanut oil, and has opened up an important industry, which if it receives proper support from the Government, bids fair at the termination of hostilities to render the United States independent of foreign sources of supply, according to Mr. Edgar H. Laing.

New crushing plants have been opened up, both on the Pacific and Atlantic coasts, to handle this copra, and the remarkable success obtained by the manufacturers of nut butter for edible use has practically consumed the oil as fast as it could be manufactured. Shipments of copra during the year just closed entered at the different ports of entry of the United States, as reported by the Department of Commerce at Washington, has shown a remarkable increase. The statistics are as follows:

Copra, 366,510,360 pounds, valued at \$19,167,058. This large volume of merchandise bids fair to be rapidly increased during 1918, since quite a number of the cottonseed oil crushers in the Middle and Southwest have recognized the possibility of crushing copra, and are adapting their machinery to handle this product. Taking the basis of sixty pounds of cocoanut oil, which is the estimated yield from one hundred pounds of copra, it will be seen that 220,000,000 pounds of cocoanut oil was manufactured during last year, against a total importation of cocoanut oil into the United States of 163,000,000 pounds. Therefore, based on the government returns, there was available in the United States during last year 382,000,000 pounds of cocoanut oil, or approximately 190,000 tons of 2,000 pounds.

At the close of the year the copra situation was in a very difficult position, owing to the scarcity of freight. Immense quantities of copra are reported as available in the Celebes Islands, Java, Ceylon, Manila and the South Sea Islands and Straits Settlements, but, with the abnormal freight conditions, apparently no tonnage is forthcoming to move this valuable commodity so that the crushers can receive it in the United States at what would be a normal value.

At the beginning of 1917 copra sold at between 7 and 8 cents per pound at New York, and in December it had worked up to between 9½ and 9¾ cents at New York. At the Pacific Coast points the year opened at about 6½ cents per pound, and closed with sales reported at between 8½ cents to 9 cents per pound, and during January of this year 9¾ to 9⅞ cents was paid at New York, and at the Coast some reports of sales were as high as 9¾ cents.

The Edibility of Green Oysters.

It occasionally happens that oysters are found to be colored more or less deeply with a greenish pigment apparently deposited in the gills and at times extending into the palps or other parts of the oyster.

The reason for this coloration apparently epidemic in certain oyster beds has been the subject of investigation for nearly a hundred years, inquiries being directed principally upon the question of the edibility or otherwise of oysters so colored. The green-gilled oyster was a subject for controversy in France in 1820, when Gaillo wrote a paper in which he showed that the unusual green color was due to the presence in reservoirs where oysters were fattened of a species of

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Canned Salmon

ALL GRADES ALL SIZES

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Constant U. S. Government Supervision

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Rigid sanitary rules in every step of production.

These rules are fully appreciated by

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which sincerely endeavors to merit the confidence of the ever-increasing patronage given their choice oleomargarine

"MARIGOLD"

The National Bread Spread.

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diatom, the "navicula ostrearea," containing a pigment which found its way into the tissues of the oyster, principally into the gills.

Further investigations by Lankester showed that the green pigment caused by the "navicula ostrearea" was harmless and did not materially alter the food value of the oyster. Herdman and Boyce, however, have shown that the green color of oysters is not always due to the diatom and that what is known as the "copper green" oyster contains appreciable amounts of copper salts which can not altogether be looked upon as a harmless contamination. The source of the copper salts used by the oyster to form the green pigment is at present not definitely known, but it may be assumed that in one way or another it must be contained in the water bathing the shellfish at some period of its growth.

Some local interest in the subject has been aroused by recent complaints of green oysters being sold in the city of Newark.

Upon investigation it was found that the oysters were shipped from an oyster bed upon the New Jersey coast, the water of which might possibly be contaminated by the wash from a copper smelting plant located not a great distance away.

Samples of the green oyster were submitted to the city chemist for analysis, who reported that copper salts were present in considerable amount. Two large oysters contained copper salts equivalent to one-third of a grain of metallic copper. As copper salts are not now given medically on account of their poisonous properties, it is evident that the copper green oysters, if containing copper salts in appreciable amounts, have considerable potentialities for harm if partaken of for any period.

The question as to whether green-gilled oysters are harmful or not will depend, therefore, upon the nature of the substance causing the green color. If this is due to the diatom "navicula ostrearea" no objection can be made to the oyster so infected. When, however, the green color is copper pigment, definite information will be required of the amount of copper salt present before a clean bill of health can be given.

Forecasting the Menu by Averages.

To serve food in hotels and restaurants without waste, it is advisable to reduce the number of different dishes included on the menu, and also to study quantities involved in the orders of each dish from day to day, so that working averages may be struck. Where several hundred people are fed daily, their orders involve the law of averages, and quantities can be calculated and provided for with almost startling accuracy. The *Saturday Evening Post* gives the following figures showing the percentage of each group of items on the menu ordered by the patrons of a large department store cafe:

Relishes	1.7	Ice cream.....	14.4
Syrups	6.7	Cheese, crackers and	
Fish	5.2	beverages	30.5
Boiled meats.....	2.0	Dishes cooked to or-	
Entrees (made dishes)	6.0	der	5.3
Roasts	5.6	Club lunches (75	
Vegetables	7.4	cents)	33.5
Sandwiches	6.2	Fruit	2.4
Pies, cakes and pud-		Cold dishes.....	2.6
dings	14.4	Special for the day..	8.8

It will be seen by the above figures that club lunches, which have been advocated as a means of making food-saving adjustments in the menu, show the largest percentage of any group on the list. This list covers both winter and summer menus, as well as different conditions of weather and business. In many kitchens it is the practice to cook up food at random, and trust to chance in the customers' orders, but it is suggested that by wide use of the law of averages in such matters, the chef, having his statistics at hand, might look at the sky, the calendar, the thermometer, and the morning paper and cook exactly enough for that day's use and no more.

THE AMERICAN FOOD JOURNAL



With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

ROBERT GORDON GOULD, *Editor*

Vol. XIII

APRIL, 1918.

No. 4.

Tilting at Windmills

DESPITE the fact that the attacks upon corn sirup get a body blow whenever they are considered by a gathering of scientific men, there still seems to be a certain amount of news value in the old, reactionary, anti-scientific objections. Apparently, as long as there can be found so-called authorities in the dietetic field who are willing to maintain a lost cause despite the preponderance of evidence against them, just so long will the publishers of general magazines play up their utterances. It's good business, at least for the moment. As a case in point we have *Good Housekeeping*, with a page each month from Dr. Harvey W. Wiley.

In the March issue of that otherwise excellent publication, the aforesaid Wiley, in answering the inquiry of a reader, delivers himself of the following philippic:

"The corn sirup spoken of in the article is the erroneous name of the same glucose sirup to which I called attention in *'Good Housekeeping'* a few years ago. The feeding of glucose to children is, I believe, fraught with many dangers. It is entirely devoid of vitamins and the only mineral that it contains is that resulting from the neutralization of the acid which is used in making it from starch. It is so unpalatable that it is never offered for consumption by itself. No wonder that it does not ferment so readily, since more than half of it is made of dextrine, which is the material used in mucilage."

Here we have Don Quixote Wiley with lance atilt. His first joust is with the name "corn sirup" itself. He tells Mrs. M. MacE. that corn sirup is an "erroneous" name. The U. S. Departments of Agriculture, Commerce and the Treasury did not so think when, in 1909, the respective secretaries thereof promulgated Food Inspection Decision No. 87, which, in part, reads:

"We have each given careful consideration to the labeling, under the pure food law, of the thick, viscous sirup obtained by the incomplete hydrolysis of the starch of corn and composed essentially of dextrose, maltose and dextrine.

"In our opinion it is lawful to label this sirup as 'Corn Sirup': * * *

This promulgation was later legalized by the famous

McDermott decision in Wisconsin, action which was reinforced, amplified and strengthened by the so-called Sanborn decision, also in Wisconsin.

The next windmill in Don Quixote's field of vision is the danger, *in his opinion*, of feeding corn sirup to children. Note the adroit use of the qualifying phrase, "in my opinion." No libel suits for brother Wiley, or his employer, Hearst. But let us see what those who really know something about the feeding of infants have to say as to the use of corn sirup. Whom shall we hear from first? The list is long of those who have gone on record in favor of the use of corn sirup in infant feeding. Among the many is Dr. A. L. Benedict, A. M., M. D., of Buffalo, N. Y., in whose "Golden Rules of Dietetics," on page 88, appears the following:

"Glucose may be considered as nearly pure, predigested carbohydrates, and, if used in moderation, there is no physiologic objection to it."

A year or so ago, H. G. Wells, A. M., Ph. D., M. D., professor of pathology at the University of Chicago, was so reckless as to state, in open meeting:

"I would pay more for corn sirup for food for infants than I would for sugar."

prefacing that remark with:

"In an institution with which I am familiar, a series of infants under careful observation received corn sirup as a source of carbohydrate food for a considerable period of time. Many of these children were of subnormal health for one reason or another, but no harmful effects were observed; on the contrary the use of this predigested starch as a source of nourishment in digestive disturbances was found highly valuable."

In answer to questions calculated to compare corn sirup with cane sugar sirup of the same monetary value, Dr. Wells stated that he preferred to feed corn sirup to infants rather than other sirups—

"Because the corn sirup represents a mixture of dextrans in various stages, which would permit of a gradual digestion, a gradual absorption, through various steps."

Dr. A. J. Carlson, Ph. D., associate professor of physiology of the University of Chicago, has stated:

"On the basis of what is known of carbohydrate chemistry and physiology, we have no reason to suppose that the acid hydrolysis of starch is essentially any different from the enzyme hydrolysis of starch."

And next we are told that we must beware of corn sirup because it is "devoid of vitamins." Here we have Don Quixote at his best. To be sure; so it is "devoid of vitamins." And who ever claimed anything to the contrary? And what food product with which corn sirup could, by any stretch of the imagination, be compared is possessed of "vitamins"? Assuming that for the practically discarded term "vitamins," Dr. Wiley means food hormones, or what are best understood at present as, generally speaking, "fat soluble A" and "water soluble B," it is quite accurate to state that equally devoid of these important substances are honey, sugars of all sorts, starch, vegetable oils, etc., etc. The list is long; but equally long is the list of natural products which do possess these food essentials.

Prof. E. V. McCollum, late of the University of Wisconsin but now at Johns Hopkins, and connected with the Rockefeller Foundation, is the leading worker in this particular field. He claims that while the need for these food essentials in the diet is very real, their distribution throughout the vegetable kingdom is sufficiently general for all practical purposes. The idea of criticising corn sirup for its lack of "vitamins" is quite novel and entirely in keeping with the mental processes of a Don Quixote. This is the most absurd feature of the whole article.

Corn sirup, we are informed, contains no mineral constituents other than those formed in its manufacture. Quite true. By extremely clear-headed chemical thinking, the hydrolysis of the starch to sugar is brought about by the use of dilute hydrochloric acid, the same acid as is secreted by the human stomach. In order to make sure that none of the acid is present as such in the finished product, the hydrochloric acid is made to combine with a basic substance containing sodium. The result is that a small amount of sodium chloride is formed. When we use sodium chloride on the dinner table we call it salt. Another windmill gone smash!

As a matter of fact, those who want mineral matter, and we all need it, seek it not in such refined products as sugar—no matter what sort of sugar we affect. Fresh vegetables contain an abundance of readily-absorbed mineral constituents. A good drink of water, other than distilled water or rain water, will give one more mineral matter than many servings of most dry foods. That windmill certainly was a bad one.

As to whether or not a "mildly sweet" substance, to quote Leach, is unpalatable is a matter of personal taste. Here we may again listen to Dr. H. G. Wells, mentioned above, who says, in answer to a direct question as to which form of sweetening agent, cane sugar or corn sirup, he would prefer as far as digestion was concerned:

"If you had to limit your carbohydrates to cane sugar or glucose you would find a person would get along much better on commercial glucose than on sugar, because he would get sick of the amount of sweetness that he would get with cane sugar as his sole source of carbohydrate food."

As a matter of fact, corn sirup is generally regarded as about three-fifths as sweet as cane sugar. For some purposes that difference is an advantage, for other purposes a disadvantage. To attempt to associate this point with an attack on corn sirup shows

how far afield Don Quixote's vision ranges when on the lookout for windmills.

That corn sirup is "more than half dextrine" doesn't seem to square with the truth. In Leach—a real authority—the proportion of dextrine in normal commercial glucose ranges from 29.8 to 45.3 per cent. It would not be a mortal sin were Don Quixote's figures correct. Dextrine is a food, as witness the crust of bread, which is dextrinized starch.

And that brings us to the last windmill on the present journey. Dextrine is, forsooth, "used in mucilage." Since when, brother Don Quixote? Until you spoke we had always been of the opinion that the base of mucilage was gum arabic. Quite true, dextrine, or wheat flour, for that matter, can by roasting be brought to such a state that when mixed with water it will form an adhesive. And that it is an edible adhesive is vouched for by the fact that the U. S. Government uses dextrine on the back of postage stamps and envelope flaps—which are notoriously likely to be licked by the human tongue.

Butter Standards

Professor George L. McKay, secretary of the American Association of Creamery Butter Manufacturers, has filed with the Joint Committee on Definitions and Standards a pamphlet containing the suggestions of that body for a standard for butter. There is nothing new presented for the consideration of the Committee. The Professor seems to rather favor an eighty per cent fat and sixteen per cent water standard but ends up by suggesting an eighty per cent fat standard with some tolerance. There is much in the brief that is foreign to the subject concerning which the Committee has asked for suggestions.

At the time Swift and Company submitted its brief upon the same subject to the Joint Committee, this JOURNAL reprinted the editorial appearing in *The Dairy Record*, which is published in St. Paul, Minnesota, and represents several creamery associations of that state. We feel that we cannot do better than follow the same course in commenting upon Professor McKay's effort. The following editorial appeared in *The Dairy Record* of March 27, 1918:

Centralizers On Butter Standards.

Prof. G. L. McKay, secretary of the American Association of Creamery Butter Manufacturers, has prepared a pamphlet, addressed to the chairman of the Joint Committee on Definitions and Standards, containing that organization's suggestion for a standard for butter. Prof. McKay claims that his organization manufactures more than one-quarter of the creamery butter made in the United States, and he holds that he represents the interests of hundreds of thousands of farmers who patronize, steadily or intermittently, the members of that organization. The packers should take a tip from this claim—next time they appear before some official committee, they should be able to claim, with as much right, that they represent every farmer in the United States and almost every consumer, as just about everybody in the country does business with them in one way or other in the course of a year.

Cow's Product and Manufactured Product In Same Class?

Prof. McKay starts out apparently to show that existing laws regulating butter and, of course, governing whatever action the Joint Committee finally

takes, were enacted at a time when butter was manufactured, and the whole dairy industry, including frauds, was conducted under conditions very different from what they are today, thus suggesting that present laws are obsolete. Oleomargarine manufacturers might make the same claim in trying to get the oleomargarine law amended. He argues that if a butter-fat standard of butter should have the same basis as the butter-fat standard of milk, the former should be seventy-two and six-tenths per cent. The secretary arrives at this startling conclusion by pointing out that the average butter-fat content of milk is three and seven-tenths per cent, but the legal standard all the way from three to three and twenty-five hundredths per cent. He says, "A standard of three and twenty-five hundredths per cent is twelve per cent below the average of three and seven-tenths per cent. Assuming eighty-two and five-tenths per cent as the average percentage of fat in butter and deducting twelve per cent gives seventy-two and six-tenths per cent, a minimum standard on the same basis as in milk." The secretary leaves it to the Joint Committee on standards to remember that milk is the natural product of the cow, while butter is a manufactured product of the cow, which makes the comparison a remarkable piece of reasoning.

Why Butter-Fat Content Was High.

The pamphlet gives a number of apparently inexplicable instances of butter containing too much moisture. The secretary cites two cases in which Federal Dairy Division men were unable to explain the reasons for the presence of too much moisture, or furnish a remedy; but fortunately in the one of the cases Prof. McKay, then of Ames, could furnish a man able to find the remedy. He also mentions work that he and Prof. Bouska did in 1896 at Ames along the line of making a dry butter, resulting in six and seventy-two hundredths to fifteen and twenty-eight hundredths per cent of moisture. (No doubt Prof. Bouska can do better today.)

The pamphlet points out that in about 1896 butter-makers practically disregarded composition of butter and overrun, and made "strenuous efforts to win a high score in a contest or on the market," and that in order to secure a uniform distribution of salt it was customary to rework the butter. Hence, contest butter from that time shows a low percentage of water, the pamphlet says, "and does not represent the prevailing commercial practice at that time." Just why striving for a high score on the market cannot be classified as a commercial practice, the *Dairy Record* fails to see. In any event, Prof. McKay's effort to explain the high fat content of the old days by pointing out that little or no attention was paid to composition and overrun—in other words, when quality was the main consideration and "methods" were disregarded—he lets out of the bag a big, black cat which advocates of a high butter-fat standard will be quick to catch.

Old Standards.

Tables in the pamphlet show that the moisture content in butter in England back in 1879 varied from four and fifteen-hundredths to twenty and seventy-five hundredths per cent, also that scientists of that day fixed the minimum butter-fat content for butter at eighty per cent. Another table covering analyses of twenty-one samples of one brand of butter made in that many different plants owned and operated by the same firm shows a variation in percentage of but-

ter-fat from seventy-seven and ninety-two hundredths to eighty-two and sixty-eight hundredths. The pamphlet states that these twenty-one samples of butter which the secretary has analyzed are the so-called Brookfield brand.

Organization's Own Analyses Missing.

The Brookfield brand of creamery butter is made by Swift & Co., who are not members of Prof. McKay's organization, and while these analyses are interesting and not complimentary to that firm and for that reason a side-swipe at the oleomargarine manufacturers welcome to all of us, it is remarkable that the secretary fails to show analyses of butter made by members of his own organization. They would no doubt be far more illuminating and instructive to the Committee on Standards, the dairy industry and the farmers, for the reason that they cover a wider range and Mr. McKay himself, no doubt, has access to the manufacturing records of every churning analyzed. According to the last annual report of his organization its own laboratory made 5,773 chemical and bacteriological determinations. Why Prof. McKay did not draw on this wealth of material in his suggestions and discussions of butter-fat and moisture standards in a brief addressed to the Joint Committee on Definitions and Standards on behalf of his organization, that committee may well ask. The dairy industry generally, and especially the co-operative creameries and the farmers should ask themselves the same question, considering the fact that this brief is published as a regular bulletin of Prof. McKay's organization under the heading, "Facts About Butter." *Dairy Record* readers are in position to make their own deductions.

Typographical Camouflage.

Prof. McKay believes in cream pasteurization, but does not make any suggestion as to its relation to a butter standard except possibly as a reason for permitting standard butter to be made from neutralized cream. The latter subject and the alleged desirability of letting such butter masquerade as standard butter are urged upon the Committee at great length. The kind of arguments put forth are best illustrated by the fact that Prof. McKay in quoting the *Chicago Dairy Produce* of July 31 and August 26, 1917, does so by referring, first, to the *Dairy Record* of February 20, 1918, in which appeared, second, a paper read by M. P. A. Sondergaard, third, of the Federal Dairy Division, at the 1917 convention, fourth, of the Minnesota State Butter and Cheese Makers' Association, in the course of which paper Mr. Sondergaard quoted, fifth, the issue of the *Chicago Dairy Produce* referred to. The secretary uses up about seventeen lines of space to quote a three-line paragraph, in order to connect the *Dairy Record*, the Minnesota State Butter and Cheese Makers' Association, the Federal Dairy Division and Mr. Sondergaard with something said by a Chicago paper which would be favorable to butter made from neutralized cream! This sort of typographical camouflage should convince the Joint Committee on Definitions and Standards of the real object of the pamphlet and the main objective of the centralizers' fight involved in the fixing of a butter standard, namely, permission to use cream neutralizers in the manufacture of standard creamery butter.

Main Fight Against Prohibition of Neutralizers.

The co-operative creameries should take note of this incident, as it shows clearly how important the neutralization of cream is to the central plants, and

what desperate means their organization and its secretary will employ to be permitted a continuance of this practice. If this is considered so vital by the centralizers, the co-operative creameries of Minnesota should see to it that the utmost effort is put forth to convince the Committee on Definitions and Standards that butter made from neutralized cream should not be considered standard creamery butter.

Eighty Per Cent Fat and Tolerance.

The balance of the pamphlet is taken up with quotations of opinions by dairy professors and officials, most of them favoring an eighty per cent butter-fat standard and, in some cases, also a sixteen per cent moisture standard and an eighty-two to an eighty-two and one-half per cent butter-fat standard for unsalted butter. The pamphlet does not state exactly what Prof. McKay recommends, except that he does not want any prohibition of the use of neutralizers. It would appear, however, that he favors an eighty per cent butter-fat standard in creamery butter, probably with "some tolerance." In reference to the possible prohibition of the use of neutralizers in butter sold as standard butter, Prof. McKay hopes "the time will never come when it will be considered a crime

to make the best possible food out of the raw material at hand," which is the kind of general statement that even the manufacturer of oleomargarine could make in regard to his product and methods, with equal justification.

As Far Apart as Ever.

When Prof. McKay in his pamphlet comes out strong for prohibiting the use of butter-fat in the manufacture of oleomargarine, and, we suppose, in other butter substitutes, the *Dairy Record* at least finds a platform of his on which we are glad to join him in that state of absolute harmony between co-operatives and centralizers which has been the futile dream and object of many a messenger from the camp of the latter to the "co-ops." We thoroughly believe in the fairness of this proposition and would like to see the co-operative creameries do their full share in bringing this about. However, it has little to do with a butter standard, and on that subject, especially as it concerns the neutralization of cream, the co-operative creameries, and more especially the co-operative creameries of Minnesota, are as far apart from the centralizers' organization as ever, and nothing should fool them away from their stand.

Wheat—A World Problem

By RAYMOND PEARL,

of the United States Food Administration.

THE American people have been asked to reduce their per capita wheat consumption to 1½ pounds per week. In appealing for this radical revision of the eating habits of an entire nation, the Food Administration declared it a military necessity which should be viewed in no other light. We have been told that without this curtailment, thus increasing our exports, the Allies cannot maintain the health and strength—possibly even the moral courage—of the people who are waging and bearing the brunt of this war.

Thousands of our people have shown that they recognize the reason and justice of this appeal for sacrifice. The impelling necessity for the Food Administration's request has become generally understood. The cold figures upon which the computation is based, showing absolutely that unless we tighten our belts we must expect disaster, are not so familiar to the average consumer, however.

The nations with whom we are aligned in this war are no longer able to contribute normally to their own support. Merely a casual study of the world wheat situation is sufficient to show that the Allied nations will face famine should American supplies be cut off. They face a heavy deficit in their food supplies, in no commodity more apparent or more alarming than in wheat. Their consumption cannot possibly be reduced to a point that would bridge the gap between needs and production. A fairly-divided sacrifice in this country, however, would make it possible for them to bring the two lines together.

To appreciate the imperative necessity that drives Europe to drain the wheat resources of this country we must realize very definitely that shipping tonnage is one of the most important factors in this war. We

must face the fact that there has been a very material decrease in the world's tonnage; and at the same time there has been a very material decrease in demand. Never has there been a greater need, yet today we have to meet the requirements of war with fewer vessels than barely met the world's demands in times of peace.

Even were there no other factors to consider, the U-boat alone has made the Allies dependent upon America for the sinews of war. Its toll has almost cut off all other sources of supply. Every vessel must be made to work at full efficiency—and even then there is a shortage that becomes more and more alarming each month. Even with every available ship plying at full speed to and from the nearest source of supplies the present tonnage is insufficient to meet all needs of the people who have suffered most in this war.

It matters little how much wheat was raised in India or Australia or the Argentine last year, nor how much was consumed in those countries. With a world shortage of ships their supplies were unavailable. A vessel can make the trip from Europe to America in half the time that would be consumed in a trip from Europe to the Argentine—one-third the time needed to send it to India or Australia. In the Argentine trade, twice the number of vessels would be needed to maintain the present American service; in the Indian or Australian trade, three times the number.

So far as the Allied necessities are concerned, there might almost as well have been a complete failure of the Argentine, Australian and Indian crops last year. As a matter of fact, there are in Australia today millions of bushels of wheat that belong to the British Government—bought and paid for at less than half the price England is now paying for American wheat.

And yet that wheat is literally going to waste because England cannot, in face of the enormous demands of the Allied peoples, afford to divert from nearer ports the ships needed to transport it to Europe.

The shipping situation leaves only two factors in the food problem—America and the Allies. If the Allies cannot obtain from America the supplies they need, they cannot remain in the field. If the American supplies fail—and they meet present necessities only because the European people have cut their demands to the barest minimum—the Allies must speedily become undernourished, weak and disheartened. Should that time ever come America will be forced to stand alone against Prussianism—against a despotic force which will have proved its autocratic superiority over our vaunted democracy.

Fields blasted by battle cannot produce food. The most fertile lands of France and Italy are now in the hands of Germany. Men who once tilled them are now under arms; the Allies' farmers have left the furrow for the trench. There is talk in this country of labor shortage—in France the shortage approaches complete absence where experienced farm hands are concerned. The few fields still producing are cultivated by women and children, many of them even drawing plows once pulled by horses which have been slaughtered to save them from starvation.

This loss of competent labor, with lack of fertilizers and loss of horse power, explains why the decrease in production has been disproportionate to the decrease in cultivated acreage.

The 1917 wheat production in England, France and Italy was 40 per cent below the average maintained in the five years preceding war—and yet the decrease in acreage was only 20 per cent. And this includes England, where crops have not yet been destroyed nor land made untillable by German shells. Before the war these three countries produced 561,000,000 bushels of wheat per year. In 1917 the production was 213,000,000 bushels below that figure—and even before the war those were heavy wheat-importing countries.

Naturally when home production dropped the European nations looked to their colonies and dependencies for support. They were not found wanting. The colonies increased production by about 15 per cent. Had there been sufficient tonnage, probably this increase would have kept the wolf from the door. But so great has been the submarine toll that much of this wheat, abundant as it has been, is useless to France and the United Kingdom.

This drop in exports from the more distant nations, when a heavy increase was badly needed, had to be balanced by increased exports from the United States and Canada. Unable to secure wheat in the accustomed markets, where it was most abundant, the Allies were forced to lay America under increasing tribute. As the submarine sinkings have gradually risen, each one making it still more imperative that every available ton of shipping be kept in the European-American channels, this tribute has also risen. This is illustrated by the fact that wheat exports from the Argentine, India and Australia have steadily decreased since first the U-boat began to feed the bottom of the sea.

Although the scarcity of shipping has been keenly felt ever since war began, only in 1917 did the submarine menace become so threatening that European imports from all sources except America began a sharp decline that is sending them dangerously near to the vanishing point.

In the five years preceding the war, the United States exported annually 105,000,000 bushels of wheat. In the first year of the war, the Allied demands caused this to increase more than three-fold, running our 1914-15 exports to 333,000,000 bushels. As ships have been destroyed this has since decreased but even in 1916-17 was just about twice the normal figure, with exports of 204,000,000 bushels to our credit. Canadian increases in exports have been fully as noteworthy, more than trebling in the first two years of war and still almost double the average established in the five years prior to the war. The pre-war average of 94,000,000 bushels jumped in 1915-16 to 292,000,000 and in 1916-17 had fallen only to 179,000,000.

Our problem—and Canada's—is now simply this: Can America supply herself and at the same time feed a fighting world? There is only one way in which we can assure an affirmative reply—by broadening the margin between home production and home consumption.

If we are to meet immediate needs this margin may be broadened in only one way—by decreasing home consumption. Canada's belt is tightened and she is exporting every available grain. We have already sent our entire surplus abroad. Left in this country is only enough wheat to meet our normal requirements. Not only had we shipped at the beginning of the year the normal surplus from our own production, but we had shipped an additional 26,000,000 imported from other countries, the largest American import on record. This import is largely explained by the fact that Holland, a neutral nation, has not allowed her vessels to travel in the war zone. Comparatively few in number, far from adequate to meet the present emergency, they have been utilized for bringing to America, for reshipment, supplies available in other markets.

On March first there were only 200,000,000 bushels of wheat in America. Out of that, 75,000,000 bushels had to be reserved for spring seed and carry-over—irreducible factors in considering our available supplies. This left only 125,000,000 bushels to feed ourselves and the Allies, until we begin to draw upon the new crop, about the first of August.

Out of that 125,000,000 bushels, the Allies must have 75,000,000. Without it they could not be maintained in fighting condition. Lord Rhondda, British Food Controller, has cabled to the United States Food Administration that unless that demand, as an irreducible minimum, was met he could not take responsibility for assuring the English people that they would be fed.

That leaves us only 50,000,000 bushels to cover home consumption from March 1 until July 1—just about half of what has normally been consumed in a similar period.

Roughly speaking, we will have—if the Allies' needs are met—about six pounds of wheat and wheat products per person per month—about 1½ pounds per week. Our normal consumption has been at the rate of at least three pounds a week.

Such is the voluntary ration we must assume until the next harvest if we are to play our part in the world conflict. For many of us it will mean sacrifice—but for none of us could it mean a sacrifice as great as has already been made by millions of our European associates in the struggle for freedom and liberty.

America is on trial.

We must and will fulfill the test.

Meat Animals in U. S. Increase Over 6,000,000 in a Year

THE United States Food Administration makes public a summary of statistical reports showing the 1917 movement, slaughter, and export of cattle, pork and sheep. The reports are based on figures compiled by the Department of Agriculture. The summary shows that on January 1, 1918, the number of meat animals in the United States was greater by more than 6,300,000 than it was on January 1, 1917. Figures giving the number of inspections for slaughter indicate a material decrease in consumption.

This, combined with the fact that the number of cattle has been on the increase, demonstrates that meat is now backing-up on the farm, largely in response to the Food Administration's appeals for increased production and decreased consumption. The increased weight of hogs, rising from an average of 203 to an average of 232 pounds at Chicago, was another important factor in the recent modification of restrictions against the use of meat.

Another factor enabling the Food Administration to modify its request for reduced consumption in meat was the fact that weather conditions and traffic congestion caused an enormous back-up of hogs on the farm. They have not yet come to market, but the opening weather will prove a strong factor in making the March and April run hogs much above normal. Still another consideration is the enormous accumulation of stock at the packing houses. Shortage of shipping facilities, owing to the demands on tonnage for handling the imperative wheat shipments, has made it impossible to expedite the movement of this stock from the storage houses to Europe. The "freezers" are now taxed to capacity. In order to clear them of this unusual accumulation it has been deemed advisable to modify for a limited period the restrictions against the use of meat. The Food Administration hopes that this modification will result in a greater saving of wheat, which is more needed in Europe now than at any time since the war started.

The summary shows that the total number of cattle in the United States on January 1, 1918, was greater by 1,247,000 head than on January 1, 1917. The number of hogs increased 3,781,000. The number of sheep and lambs was 1,284,000 more than at the beginning of 1917. This shows a total increase of 6,312,000 meat animals.

The cattle report shows that on January 1, 1918, there were 66,830,000 cattle in the country. Inspections for slaughter increased 24.5 per cent, jumping from 8,310,557 to 10,350,208, a net gain of 2,039,651 head. In the year ending January 1, 1918, the average weight at Chicago was 933 pounds, an average loss of 48 pounds.

Beef exports, in spite of the fact that Europe was in sore need, fell off 1,427,649 pounds, a net decrease of 0.4 per cent. January, 1917, showed a gain of 100 per cent for that month. In February, June, July, October, and November, however, there were material decreases. This is explained entirely by lack of shipping facilities.

While our export dropped almost a million and a half pounds, the imports decreased 17,700,267 pounds,

44.5 per cent. This left large quantities of foreign beef available for European shipments.

The average price showed an increase of 22.1 per cent. In 1916 the average price for beef was \$9.50 per 100 pounds. In 1917 the average was \$11.60 per hundred.

The pork report shows that on January 1, 1918, there were 71,347,000 hogs in the United States, as opposed to only 67,503,000 in January, 1917—a net increase of 5.7 per cent. Inspection for slaughter dropped 21.3 per cent, falling from 43,073,843 in 1916 to 33,909,704 in 1917—a decrease of 9,164,139. The average weight at Chicago showed a net gain of 3 pounds per hog. In 1916 the average weight was 210 pounds, in 1917 it was brought to 213 pounds. Exports decreased 10.4 per cent—151,028,843 pounds. Only January, March, and April showed gains. There were substantial decreases in all other months of the year. The average price increased \$5.50 per 100 pounds. In 1916 the average price for hogs was \$9.60 per hundred. In 1917 it was \$15.10.

The sheep report shows that on January 1, 1918, there were 1,284,000 more sheep in the United States than on the same date of the year before. The total number at the opening of the present year was 48,900,000, opposed to 47,616,000 on January 1, 1917. This gives a net increase of 2.7 per cent. Inspections for slaughter decreased 21.9 per cent, falling from 11,941,366 in 1916 to 9,344,939 in 1917. The average weight at Chicago decreased one pound, falling from 79 to 78 pounds.

Exports decreased 45.7 per cent. A decrease for every month in the year gave a total loss of 2,400,416 pounds. The average price for mutton increased \$3.15 per 100 pounds, jumping from \$7.85 in 1916 to \$11 in 1917. The average price of lamb sold in 1917 was \$4.85 per 100 pounds. In 1916 lamb sold for \$10.75 and in 1917 it sold for \$15.60 per 100 pounds.

Ohio Labeling Case Finally Settled.

The decision of the Court of Appeals of Ohio, reversing that of a lower court, and upholding the view that wholesome compounds are not required by the Ohio law to be quantitatively labeled, has been affirmed by the Ohio Supreme Court.

In the January issue of this JOURNAL a brief resume of the above case, of the State of Ohio against the J. M. Sealts Co. in regard to the sale of a maple sirup compound, was given, with the prediction that the case would be taken to the Supreme Court, as has since transpired.

The above decision was given on April 2. It means that where compounds are not otherwise misbranded under the Ohio law it is not necessary for them to have the name and percentage of ingredients upon the label.

Wholesale Grocers' Conservation Convention.

The Twelfth Annual Convention of the National Wholesale Grocers' Association will be held from June 12th to 14th at Cleveland, Ohio. The headquarters of the convention will be the Hotel Hollenden. This is to be a "Conservation Convention."

Annual Report of the Chief of the Bureau of Chemistry

THE research of the year has yielded some interesting results, such as the discovery of a new sugar, sedoheptose, from *Sedum spectabile*, of a new method for the preparation of phthalic anhydride, of new sugar derivatives, of new facts concerning the proteins of agriculturally important seeds, concerning the arsenates and chlorarsenates of lead, and concerning the explosibility of carbonaceous dusts. Other important results deal with the identification of the volatile reducing substances of vinegar as acetylmethylcarbinol; the improvement of the methods for the separation of lithium from the other alkali metals, and for the identification of lactic and butyric acids in biological products. The results of about 60 investigations have been reported and some 50 others completed. Nine bulletins and two Farmers' Bulletins were published.

More attention has been paid than ever before to the study and demonstration of methods of conserving and preparing foodstuffs by drying, canning, pickling, preserving, and by the use of meritorious substitutes. In consequence, educational and demonstration work has grown very much during the year.

The enforcement of the Food and Drugs Act has undergone no radical changes. The disposition of the foodstuff and drug industries to co-operate with the Bureau of Chemistry continues to grow with a resulting improvement of the quality of their products and the elimination of spoilage and wastes. While the number of cases sent to prosecution is about the same as in former years, the amount of work involved in perfecting a case is becoming steadily greater, a certain indication of a very general improvement in commercial practice. The progress of the past 10 years has been so great that an effort has been made at the end of this report to summarize the effects of the enforcement of the Food and Drugs Act during the first decade since its enactment.

Research.

Plant chemistry.—Studies upon the effect of fertilizing wheat with nitrates and potash at different states of growth have demonstrated that nitrates applied when the wheat is beginning to head affect the composition of the wheat but not the yield, while application when the plant is 3 to 4 inches high affects the yield but not the composition of the wheat.

Investigation has shown that the proteins of buckwheat flour contain a high percentage of basic amino acids, an important fact in estimating the value of buckwheat as a substitute for wheat.

The results of the study of some of the proteins of the peanut have been published, and in co-operation with the Bureau of Animal Industry it has been shown that peanut meal is a valuable feed for dairy cows. Farmers' Bulletin 751 on Peanut Oil has been issued jointly with the Bureau of Plant Industry.

The study of kafirin, an alcohol-soluble protein of kafir, has been published. The chemical and physical properties of the different parts of the kafir kernel have been studied. The germ and endosperm closely resemble those of corn. The germ contains oil. The bran, however, differs from that of corn in having a very high ether extract due to the presence of waxy

material. These results indicate that it might be possible to obtain by milling kafir, products analogous to the commercial corn products.

Studies upon the occurrence of manganese, in *Chrysanthemum cinerariaefolium*, upon the effect of boron on plant growth, upon gingerol, the pungent principle of ginger, and paradol, the pungent principle of grains of paradise, have been completed, and others on the composition of the bark of the *Viburnums*, of coca leaves, of *Pterocarpus* wood and of *Chaulmoogra* seeds are in progress.

A preliminary study of the volatile oil of Chinese mustard, *Brassica juncea*, and Japanese mustard, *Brassica cernua*, indicates that the oils are mixtures containing only in part allylisothiocyanate. The oil of *Brassica campestris annua sativa chinensis*, an adulterant of mustard proved to be crotonylisothiocyanate, an oil without mustard qualities. Since the plant grows very vigorously, it is planned, in co-operation with the Bureau of Plant Industry, to utilize it either for greens and salads or for stock feed. The seeds yield over 40 per cent of fatty oil with the general characteristics of rape oil.

A study of *Piper bredemeyeri*, an adulterant of matico, *Piper angustifolium*, showed that the volatile oil like that of *Piper mandoni* contains dillapiol and is free from asaron obtained from genuine matico and from the camphor obtained from *Piper angustifolium* var. *Ossanum* and *Piper camphoriferum*.

Of the saponins of the yucca and agave species studied, all have been found to yield the same saponin when hydrolyzed. Upon hydrolysis the saponins of *Yucca filamentosa*, *Y. glauca* (*Y. angustifolia*), *Agave lecheguilla* and probably *radiosa* yield glucose, while that from *A. lecheguilla* also yields galactose and that from *Y. filamentosa* apparently glucuronic acid. Some of the results have been published.

The studies upon cotton reported last year have been continued and extended to other genera of *Hibisceae*, especially to wild cotton, *Thurberia*.

Many common foods of vegetable origin have been examined for oxalic acid.

Cereals—flour.—A bulletin upon the by-products of rice mills is in press. It gives data which should enable chemists to determine whether rice brans, rice polishes and similar by-products have been adulterated with hulls. Studies have also been made upon the difference in composition of natural brown and of polished rice. The pearling of barley and the use of barley as food have been investigated. The studies upon the determination of grades of flour, upon the effect of granulation upon the baking quality of flour and upon wheat substitutes in the baking of bread have been continued. It has been found possible to make good flour and bread from einkorn, emmer, spelt and Polish wheat.

Fruits and vegetables.—The changes in chemical composition that take place in the ripening of California olives, oranges, grapefruit, and cantaloupes, and of Florida oranges and grapefruit have been investigated. Data upon the composition of sound and frozen lemons have been published. Several varieties of Cali-

ifornia avocados have been examined to assist growers in choosing the best varieties. Bulletin 452, "The Composition of American Grapes Grown in the Central and Eastern States," has been issued. Studies have been made to correlate the properties of tomato products with the quality of the raw material from which they are made with special reference to the amount of decayed material used in the preparation of such products.

Sirups, sugars.—Revisions of Farmers' Bulletins 477, "Sorghum Sirup Manufacture," and 516, "The Production of Maple Sirup and Sugar," are about to be issued. A chapter on "Jelly and Jelly Making" has been contributed to Farmers' Bulletin 853.

The investigations upon the two new heptose sugars, d-mannoketoheptose from the avocado, and sedoheptose from *Sedun spectabile*, have been printed. A number of papers have been published upon the relation between the rotatory power of sugars and sugar derivatives and their chemical constitution. A number of new sugar derivatives have been prepared and made the subject of publications.

Flora of foodstuffs.—The necessity of carefully examining floating grounds for the self purification of polluted oysters during a considerable period of time to guarantee against the existence of occasional sources of serious pollution before the commercial utilization of such grounds should be approved, has been demonstrated. Such grounds are available for each of the oyster-producing areas of the Atlantic seaboard and upon them oysters cleanse themselves more rapidly than has been supposed. Unpolluted shucked oysters, taken from muddy or dirty bottoms, may become polluted in the process of washing unless certain precautions be taken. Satisfactory methods for washing have been determined and the washing apparatus has been improved. Experiments upon the hibernation of oysters indicate that the oysters pass into this condition at a temperature of the water of somewhat above 45° F. Data on the bacteriology of the shell liquor and meats of oysters have been published.

In order to determine whether or not an injustice might be done to a bottler of drinking water through the examination of his product a long time after bottling, the changes that the flora undergoes on storage of the water were investigated. No such injustice can be done since most organisms, including *B. coli*, fall off in number during storage. A few species not regarded as associated with pollution may multiply, especially in waters with a certain mineral content. The presence of a considerable number of molds in bottled waters is clearly indicative of storage.

A paper upon "*Aspergillus fumigatus*, *A. nidulans*, *A. terreus*, n. sp. and their Allies," has been completed and papers upon the "Bacteriological Study of Hamburger Steak" and upon the *Aspergillus niger* group have been reported. A large collection of saprophytic organisms is maintained in growing condition and cultures from this collection are supplied to laboratories and collaborators seeking such assistance.

Beverages.—Bulletin 493, "Study of American Beers and Ales," has been issued. A study of the presence of arsenic in hops, undertaken in co-operation with the Bureau of Plant Industry, showed that this contamination is due to the presence of arsenic in the sulphur used in curing the hops. United States Patent No. 1216722 has been granted for a carbonating machine and some of the results of the experiments on methods of carbonation of beverages have been published.

Drugs and pharmacology.—Researches on organic periodides of antipyrin, iodantipyrin, and pyramidon have been printed. Investigations upon the pharmacological action of the fat-soluble dyes, of oil of chenopodium, of the iodides, of citrates and of malates were published. Further work upon the action of dye-stuffs, of heavy metals and of organic acids is in progress.

Insecticides and fungicides.—In co-operation with the Federal Horticultural Board experiments were undertaken to discover methods of fumigating foodstuffs such as seeds, without rendering them unfit for human consumption. The results of the investigation of the poisoning of bees by sprays will be published by the Bureau of Entomology. A paper has been issued on a new tree-banding material. The work on copper and sulphur fungicides has been continued with special reference to increasing their sticking qualities and reducing the amount of copper necessary. One paper has been published upon lead chlor arsenate and three upon the arsenates of lead. Bulletin 408, "Experiments During 1915 in the Destruction of Fly Larvæ in Horse Manure," was published jointly with the Bureau of Entomology.

Analytical methods.—There have been published methods for the estimation of lactic and butyric acids in biological products, of moisture in bread, of hydrocyanic acid in beans, of total solids in milk, of the folding endurance of paper and of the strength of paper when wet; also methods for the separation of lithium from the other alkali metals; for the separation and identification of food coloring substances and of fat-soluble dyes; for the detection of lime used as a neutralizer in dairy products, and of molds in drugs, foods and spices; for the identification of emodin-bearing drugs; for the examination of methyl salicylate, and for the analysis of proprietary medicines. The description of an apparatus for the purification of mercury has been printed.

Studies were also made upon the estimation of citral, of monobromated camphor in migrain tablets, of fat in condensed milk and milk powders, of the acidity of cereal products, of added water in milk, of arsenic in sulphur and hops, upon the determination of fluorine in baking powders; also upon the electrolytic determination of lead, upon the identification of volatile oils, upon the separation of aluminum from iron, upon the Kjeldahl method for determining nitrogen, and upon the analysis of brines.

It has long been the practice of the Bureau of Chemistry to systematically test the purity of all chemical reagents furnished to the Bureau's analysts. During the past two years much difficulty has been experienced in securing chemical reagents of satisfactory purity. This applies not merely to so-called chemically pure reagents but also to those reagents supposedly of high quality, which bear upon the label an analysis purporting to represent the amounts of impurities found in the reagent. In many cases these labels have been found to be directly misleading. For example, peroxide of lead which, according to the label, was supposed to contain only a trace of nitrates, actually contained from 20 to 30 per cent of lead nitrate. Particular difficulty has been encountered in the case of those reagents which are not very soluble, such as barium carbonate. However, during the last few months of the year there was some improvement in the quality of the reagents furnished. Such heavy chemicals as the

mineral acids, ammonium hydroxide and similar products have usually been found to be of good quality and complying with the specifications under which they are sold.

Conservation of Foodstuffs.

The fleshing of poultry.—Experiments were conducted to demonstrate that wheat is not necessary or even desirable as a feed to fatten poultry. An economical ration has been found that will cause young chickens to gain over 35 per cent of their initial weight in 14 days.

Fish.—Bulletin 378, "Fish Meal: Its Use as a Stock and Poultry Food," and Bulletin 538, "Shrimp: Handling, Transportation and Uses," have been published. A paper embodying analytical data on the food value of 20 common food fishes, with special reference to seasonal variation, has been completed. A bulletin on the methods of preserving fish by freezing, from the season when the supply is abundant to the time when it is scanty, has been finished. Work on the wet as compared with the dry chilling and packing of fish has been begun. Preliminary observations indicate that contact with water or melting ice causes the fish to absorb water, to lose soluble protein and to deteriorate in flavor.

Fermentation and pickling.—Work on potato silage for cattle food has been continued in co-operation with the Bureau of Animal Industry. The work on the fermentation of sauerkraut has been continued and extended to the household preservation of corn, beets and string beans, using vinegar, or soured corn-meal extract as a starter, to prevent initial deleterious fermentation. The substitution of brining for pickling in the preservation of certain vegetables has also been examined.

Drying, starch production.—Progress has been made in the improvement of the methods of drying apricots and peaches. The work on the utilization of potatoes by drying and by the manufacture of starch has advanced to such a stage that these processes will soon be conducted on a commercial scale large enough to determine the question of costs. The preparation of sweet-potato flour and the drying of a considerable number of vegetables has also been investigated.

Citrus fruits.—The production of citric acid on a commercial scale from cull lemons has been solved and citric acid has been sold at a price several cents above the market. The preparation of lemon oil has not yet been perfected. Orange pulp for the manufacture of marmalade has been prepared and distributed to the trade. Arrangements have been completed for the shipment of frozen orange pulp. Methods for preparing citrus peel for the market have been developed. An exchange service has been inaugurated by which producers and purchasers of citrus by-products have been brought together.

Demonstration.

Poultry and eggs.—The railroads are rapidly accepting and incorporating in their refrigerator-car specifications the modifications indicated by the experiments in the transportation of poultry and eggs. About 3,500 cars with heavier insulation, basket bunkers and floor racks are now out of the shops or nearing completion. Several big systems have decided to modify all their refrigerator equipment as fast as it can be put through the shops.

Over 20 poultry and egg packing houses have been built during the past year on the basis of plans and information furnished by the Bureau of Chemistry.

More than 10 egg-breaking rooms have been constructed and equipped according to the Bureau's plans and specifications. There are now hundreds of small, clean poultry packing houses, where, 10 years ago, were sheds, insanitary and filthy. The prime factor in this transformation has been the department's work to improve the handling of perishables. The egg-breaking business of the country has been revolutionized during the past 10 years—a result due to a combination of educational and regulatory work.

The Poultry and Egg Demonstration Car was sent through Tennessee, northern Mississippi, and Alabama and Kentucky. Forty towns were visited. More than 3,000 people came to the car.



Carl L. Alsberg, Chief of the Bureau of Chemistry, U. S. Department of Agriculture.

Tomato products.—Bulletin 569, "The Sanitary Control of Tomato-Canning Factories," was issued, and an extensive educational campaign conducted to improve the production of tomato products, with special reference to increasing the manufacture of the more concentrated products, such as pulp and paste, for the purpose of conserving tin plate.

Sirup.—Improved methods of preparing cane sirup that will neither crystallize nor ferment have been demonstrated and are beginning to be adopted. Progress has been made in improving methods of clarifying this sirup.

Oysters.—Many of the oyster packing houses were visited and improved methods of sanitation, washing and handling oysters were demonstrated.

Naval stores.—Additional sets of permanent rosin types have been prepared and deposited, one with the Chamber of Commerce at Mobile, Ala., one at the Food and Drug Inspection Laboratory at Chicago, Ill.,

one at the Food and Drug Inspection Laboratory at San Francisco, Cal., and two sets have been retained at the Leather and Paper Laboratory in Washington as loan sets. All of these sets are available for the use of interested parties in their respective territories. Two parties are engaged in demonstration work on improved methods of producing naval stores in the turpentine-producing states. The present methods of production are so crude and wasteful that there is much need for this type of work.

Enforcement of the Food and Drugs Act.

Domestic foods and drugs.—The enforcement of the Federal Food and Drugs Act constitutes by far the largest part of the work of the Bureau of Chemistry. While the extent of the Bureau's activities in this direction can only be partially indicated in a statistical way, a few statistics may be of value. The records show that 371 recommendations for seizure and 719 recommendations for criminal prosecution were made through the offices of the Solicitor and of the Secretary to the Department of Justice. There were collected 5,649 official and 2,171 informal samples. The number of official samples analyzed by the field force in the laboratories is given in Table I, but this table does not include thousands of examinations made in the field, such as the candling of suspected shipments of eggs or the critical inspection of consignments of wormy or decomposed nuts.

densed Skimmed Milk, Sweetened Condensed Skimmed Milk, Dried Milk, Dried Skimmed Milk, and Malted Milk."

In the interest of more efficient administration of regulatory matters the headquarters of the Eastern Food and Drug Inspection District were transferred from Washington to the United States Appraiser's Stores in New York City.

One peddler of spurious acetyl salicylic acid was convicted under the Food and Drugs Act. Certain other distributors of spurious neosalvarsan and acetyl salicylic acid were sentenced to prison through joint action of state and municipal officials, the Post Office and the United States Departments of Justice and Agriculture. In one case a prison sentence was imposed after conviction for conspiracy in connection with adulteration of olive oil.

Special attention was given to shipments of polluted or spoiled food. A number of shipments of decomposed canned goods returned to packers or jobbers for the adjustment of claims were seized, evidence having been secured that the consignees had taken steps to dispose of the seized goods or previous similar consignments for food purposes. This practice of returning goods for the adjustment of claims for spoilage has led to certain abuses, which have been taken up with the industry in the hope that through co-operative action conditions may be controlled more effectively

TABLE I.—REPORT OF BRANCH LABORATORIES FOR YEAR ENDED JUNE 30, 1917.

Laboratory.	Import samples.				Interstate samples.				Total samples analyzed.	Hearings.	
	Legal.	Illegal.	Released without prejudice.	For inspection samples.	Legal.	Illegal.	Check analysis.	Miscellaneous samples.		Personal.	By correspondence.
Central district:											
Chicago	142	237	12	1,903	541	440	186	371	1,929	151	150
Cincinnati	110	28	60	187	88	193	36	1,408	1,863	134	440
Minneapolis	15	67	10	226	200	109	5	146	552	74	147
New Orleans	49	77	4	1,016	53	116	26	152	477	59	147
St. Louis	6	2	...	270	1,171	725	92	435	2,431	155	310
Total	322	411	26	3,602	2,053	1,583	345	2,512	7,252	573	1,194
Eastern district:											
Boston	234	360	63	9,381	161	167	113	212	1,310	342	237
Buffalo	13	21	9	32	121	109	2	252	527	82	80
New York	4,574	3,736	497	22,511	192	313	14	160	9,486	901	2,983
Philadelphia	196	155	50	1,964	49	112	...	87	649	254	26
Porto Rico	306	350	173	3,107	10	381	...	102	1,322	491	118
Savannah	62	17	3	...	60	201	1	167	506	47	109
Washington	106	88	1	16	447	579	39	541	1,801	139	48
Total	5,491	4,727	796	37,011	1,040	1,862	169	1,516	15,601	2,256	3,601
Western district:											
Denver	29	3	6	58	96	101	...	144	379	8	17
Honolulu	48	128	10	4,035	20	15	...	34	255	138	...
San Francisco	462	677	76	18,693	169	165	13	1,054	2,616	730	169
Seattle	310	321	47	7,340	92	82	...	346	1,198	275	57
Total	849	1,129	139	30,126	377	363	13	1,578	4,448	1,151	243
Grand total	6,662	6,267	961	70,739	3,476	3,808	527	5,606	27,301	3,980	5,038

The Service and Regulatory Announcements published during the year contained 30 opinions and 500 notices of judgment. There were also issued Food Inspection Decision 168, amending paragraph (e) of Regulation 29, which relates to marking the quantity of the contents of food in package form; and, upon the recommendation of the Joint Committee on Definitions and Standards, Food Inspection Decision 169, "Edible Vegetable Fats and Oils," and "Food Inspection Decision 170," "Sweetened Condensed Milk, Con-

than in the past. Steps were taken to prevent the shipment of decomposed sardines, commonly described as "belly-blown." Inspection was made of the canning of California sardines, of tuna, and of abalone. Of the California fava-bean crop it was necessary this year to seize only a few cars of excessively wormy beans. The canning of decomposed navy beans has been suppressed very largely. The interstate shipment of oysters from polluted waters has practically ceased, and the practice of adulterating oysters and scallops

with water has been checked in the main. Co-operation with state and municipal officials to control the shipment of bad eggs has been continued, and it is reported that the quality of the eggs reaching the large cities is much improved.

Co-operation to improve the milk supply has also continued, especially at St. Louis and in New England. The co-operation with local authorities begun last year in Texas to prevent the contamination of springs from which water is shipped in interstate commerce was this year extended to Arkansas, Wisconsin and Missouri, with satisfactory results. A case in which the fairness of the standard of purity for mineral water proposed by the Bureau was attacked was decided favorably to the Government. Important issues of fact involving the methods of estimating decomposition of tomato products were determined in court.

Action was taken against shipments of worthless frozen oranges and of colored immature oranges and grapefruit, of evaporated apples and canned tomatoes adulterated with water, of mixtures of cider vinegar with distilled vinegar or dilute acetic acid so manipulated as to simulate genuine cider vinegar, and of glue containing excessive zinc and other metallic impurities sold as edible gelatin.

Much work of an educational nature has been carried on, designed to secure a strict compliance with the requirements of the "net weight" amendment, and a number of prosecutions for violation of the amendment have been brought with success. Work has been in progress on tea, coffee, cocoa, spices and similar free-flowing materials to establish suitable tolerances in filling packages of this class of products. In this connection a careful study was made of automatic weighing machinery.

With the aid of state feed officials, the inspection of low-protein meal and cake made from delinted cottonseed, reported last year, was repeated and extended to the Pacific coast. This year some of the mills placed fans above the separating screens, thus removing a considerable amount of hulls and linty matter. In many cases the labeling of the meal was changed to correspond with its true composition. Action was also taken against linseed meal adulterated with screenings and oats with weed seeds added to increase the weight per bushel.

Carelessness on the part of druggists of the District of Columbia in compounding even the simpler preparations resulted in prosecutions involving magnesium citrate solution, chloroform liniment, spirits of camphor, and the like. Similar conditions were found to prevail in Porto Rico.

Greater care than is now exercised is needed in the collection and preparation of native crude drugs to exclude earth, trash and foreign plant matter. Some instances of such bad practice noted were: Pennyroyal containing 20 per cent of sand, unicorn root containing 15 per cent of earth, pipsissiwa "leaves" consisting almost entirely of stems. Accordingly, co-operation with the trade has been established to consider practical working standards for crude drugs not recognized in the United States Pharmacopœia or the National Formulary. Among the substitutions observed may be mentioned the substitution of nonofficial aconites containing no aconitine for aconite; of *Chimaphila maculata* for pipsissiwa (*Chimaphila umbellata*); of false unicorn root (*Chamaelirium luteum*) for true unicorn (*Aletris farinosa*); of *Aspidium aculeatum*, or an *Osmunda* species, probably *Osmunda cinnamo-*

mea, for male fern (*Dryopteris filix-mas* or *Dryopteris marginalis*). The samples of true *Aspidium* collected were old and not up to the requirements of the Pharmacopœia.

Co-operation with State and Municipal Officials.—On August 5, 1916, the Association of American Dairy, Food and Drug Officials adopted the following resolution: "That both state and federal food and drug officials of this Association unite in the formation of smaller associations on a basis of community interests to study ways and means of handling local problems, and that their conferences be entirely of an executive nature." In consequence, associations have been formed by the officials of New England, of the Central Atlantic States, and of the South Central States. Members of the Bureau of Chemistry have taken an active part in the meetings of these associations. Perhaps the most significant development in co-operation of the year is that active co-operation has been established with city officials. Many specific instances of co-operation are noted elsewhere in this report. A "Clearing House Letter" has been issued frequently to food and drug officials. Its purpose is to furnish officials all available current material bearing upon the enforcement of food and drug laws. A revision of the Manual of Procedure for the guidance of State Health, Food and Drug Officials was published in October, 1916. A compilation of the definitions and standards for foods and drugs that have been enacted into law by the several states was prepared and distributed to many officials. Concrete evidence of the spirit of co-operation now prevailing is found in the greater use by state officials of the Food and Drugs Act as an additional protection to their people. During the year there were instituted by 14 states, 117 such cases—25 seizures and 92 criminal prosecutions. They do not include cases instituted by the District of Columbia. Nearly all of these cases involved feeds. Only nine involved foods. There were no drug cases. The preponderance of feed cases will not be so great next year since during the present year there were collected by 24 states, 330 official samples—232 feeding stuffs, 91 foods, and 7 drugs.

Imported foods and drugs.—Statistics concerning the import work are given in Table I. The quantity of imports has been greatly reduced. Regular brands and lines of products no longer form the bulk of the importations, and even standard articles, such as belladonna, have almost entirely disappeared. On the other hand, new products obtained from countries that have not heretofore shipped to the United States and new varieties of the old from new sources have been offered. Thus imitations of such Italian cheeses as Romano, Reggiano and Parmesan have been imported from South America. The long trip through the tropics in ships not equipped with refrigeration not infrequently spoils them. The high price of beans has caused the extensive importation of many varieties of beans from many countries. Among them were so-called Burma or Rangoon beans from Asia and tapiramos beans from South America, which are known to yield hydrocyanic acid under some conditions. Shipments yielding appreciable amounts of hydrocyanic acid were therefor excluded as being dangerous to health. These poisonous beans are varieties of lima beans (*Phaseolus lunatus*) of various colors and in shape may not be unlike the common navy bean. On careful inspection they may be distinguished from the common bean by the fact that, unlike the common

bean, they show distinct striations radiating from the eye to the periphery. There are also other less easily noticeable differences. The quality of the tomato paste imported has improved. Except for a few shipments of English mustard, European, including Russian, mustard seeds have entirely disappeared from the importations, and have been replaced by Chinese, Japanese and Indian seeds. Indian rape or Tori (*Brassica napus* Var. *dichotoma*) was substituted for Indian brown mustard. Chinese mustard (*Brassica juncea*) seems often to be improperly collected, since it frequently contains much immature seed and weed seeds with *ErUCA*. The use of genuine material from new botanical sources has been encouraged when properly collected and imported under appropriate designations. Among the importations of this type which have been noted are chamomile flowers and valerian root from Japan, as well as of *Hyoscyamus muticus* for the manufacture of the alkaloid hyoscyamine. So-called Bombay or Indian coriander has almost entirely replaced the ordinary article. This coriander appears to be of the official species, but contains somewhat less volatile oil than the European variety, and several shipments have been detained for this reason. Among the drug adulterations that have been noted may be mentioned the substitution of *Inula britannica* for arnica flowers (*Arnica montana*); *Solanum nigrum* for belladonna (*Atropa belladonna*); *Xanthium strumarium* for stramonium (*Datura stramonium*); *Lippia berlanderi* and *Origanum vulgare* for marjoram (*Majorana hortensis*); *Cassia angustifolia*, *Ipecacuanha fibrosa*, and *Ionidium* species for ipecac (*Cephaelis ipecacuanha*); *Ballota hirsuta* for horehound (*Marrubium vulgare*); *Foeniculum piperitum* for fennel (*Foeniculum vulgare*); *Rheum raphaniticum* for rhubarb (*Rheum officinale*). As much as 20 per cent of the toxic plant *Tephrosia apollinea* was found in a shipment of Tinnevely senna (*Cassia angustifolia*). A fungous growth closely resembling the sclerotium known as "ergot" was found in caraway (*Carum carvi*) and in cumin (*Cuminum cuminum*).

From time to time it has been suggested by importers that the Bureau issue announcements of the action taken on detained shipments of foods and drugs in a manner similar to those now required to be issued by law as notices of judgment concerning the outcome of prosecutions under the domestic sections of the law. This matter was discussed at a hearing. It became apparent in the course of the hearing that the information to be of value should be specific and descriptive and that the issuance of such information could not be effected without identifying either directly or by implication the importers concerned. For this reason and for the further reason that these detentions are not a matter of court record, it was decided that since the importers have no opportunity ordinarily for investigating the character of the goods before arrival, the reflection which such publications would make would not be warranted and the Bureau would not publish a list of special detentions.

Collaboration.

Collaboration with the Post Office Department led to some notable results during the year. Through the assistance given by the Drug Division a considerable number of fraud orders were issued. Members of the Drug Division also assisted the officials of the Post Office Department in the trial of a number of cases. In the case of a drug fraud a fine of \$30,000 was imposed. This case has paved the way for prosecuting

this collaborative work more vigorously against products which are subject to the postal laws rather than to the Food and Drugs act. All in all, 81 samples of medicine and drugs sent through the mails have been analyzed for the Post Office Department.

The laboratories in Washington analyzed during the year 4,190 samples for other bureaus of the Department of Agriculture; for other executive departments and government establishments, 681 samples were analyzed, as shown in Table II. This total does not include samples which were analyzed by the branch laboratories of this Bureau. These are included among the miscellaneous samples given in Table I.

TABLE II.—MISCELLANEOUS ANALYSES FOR OTHER BRANCHES OF THE GOVERNMENT.

Department of State.....	2
Department of the Treasury.....	2
Department of War.....	32
Department of Justice.....	2
Post Office Department.....	2
Department of the Navy.....	83
Department of the Interior.....	3
Department of Commerce.....	9
Government Printing Office.....	3
The Panama Canal.....	23
District of Columbia.....	16
Federal Trade Commission.....	3
Miscellaneous	501

Total..... 681

Ten Years of the Food and Drugs Act.

The first 10 years of the enforcement of the Food and Drugs Act of June 30, 1906, ended January 1, 1917. It is therefore fitting at this time to present a brief history of the act, and the work accomplished under its authority during the decade.

It is perhaps impossible for any one correctly to estimate the general effect of the Food and Drugs Act. To state that more than six thousand cases have been terminated in the courts during the first decade since the enactment of the act; that manufacturers have been cited to hearing more than forty thousand times, that many thousands of factory inspections have been made, that more than seven hundred and fifty thousand shipments of food and drugs, both domestic and imported, have been examined, gives but an imperfect indication of results. The accomplishments under the Food and Drugs Act can be proven only in part by reference to the files of the Bureau. It is technically and of necessity a penal statute, but in fact and in intent it is corrective legislation, and a measure of the corrective influence of the act is the true measure of accomplishment. Perhaps such an estimate can best be gained, though imperfectly, by considering the effect of the act upon food and drug control by the states, upon the development of the food and drug industries, and by the enumeration of some of the principal abuses that have been corrected.

One of the consequences of the enactment of the Food and Drugs Act was to stimulate the enactment of similar legislation in many of the states, in order to control the local traffic in foods and drugs which, since no interstate commerce is involved, is not subject to the Federal Act. For example, in 1906 a considerable number of states had feeding-stuffs laws, but many had none. A state could not prosecute a manufacturer unless he were a citizen of that state. The federal law supplements the state law in this respect and now most of the states have similar laws. Naturally, in the beginning much confusion and apparent conflict between the local and federal laws and the local and federal administration of laws seemed to

exist, so that it was difficult for the two sets of officials to supplement one another. In consequence it was often necessary for manufacturers to make very special preparation for shipment to certain states at extra cost, which naturally was passed on to the ultimate consumer. This lack of uniformity has been remedied to a considerable degree by two agencies: (1) The Joint Committee on Definitions and Standards, consisting of representatives of the Association of American Dairy Food and Drug Officials, of the Association of Official Agricultural Chemists, and of the Department of Agriculture, and (2) by the Office of Co-operative State and Federal Food and Drug Control, established in the Bureau of Chemistry in 1914. The Joint Committee, which was established by the Secretary of Agriculture, proposes standards and definitions for the consideration of state officials which, after adoption by these officials, are adopted by the Department of Agriculture for the guidance of its officials. In this manner independent and conflicting action by independent groups of officials is, to a large extent, voluntarily obviated. The Bureau of Chemistry's Office of State and Federal Co-operative Food and Drug Control is essentially a state agency in a federal bureau. It is a special agent for the state or municipal official. It acts as a clearing house for all matters dealing with food and drug control so that all the officials of the country may be kept informed upon all that is in progress throughout the country. It furnishes regularly information and assistance to state and municipal officials. The result is that federal, state and municipal officials are able to supplement each other more effectively than was possible early in the law's enforcement. This is well exemplified by the fact that during the fiscal year ending June 30, 1917, one hundred and seventeen cases were instituted under the federal law by state officials, exclusive of the officials of the District of Columbia, and that these officials have collected more than three hundred official samples for consideration by the Bureau of Chemistry. Through these two agencies a way has been found, so far as the Food and Drugs Act is concerned, to overcome in a fairly satisfactory manner some of the difficulties that arise out of our form of Government with its conflict of federal and state jurisdiction.

The Food and Drugs Act was among the first of that group of laws which today would be classed as laws for the prevention of unfair competition. The suppression of fraud upon the consumer and of unfair competition among business rivals are but the two faces of the same coin. In consequence the food industries are sincerely and effectively supporting and helping the Bureau of Chemistry to enforce the law. Indeed, the Bureau is not infrequently appealed to by the industries to compel the cessation of unfair practices and to encourage the standardization of products when the industry is incapable by itself of bringing about these results. Instances of this kind may be found in the citrus-fruits industry, the evaporated-milk industry and the sardine industry. The act has been one of the influences which has helped to draw competitors together into associations like the guilds of the Middle Ages, associations shorn of the special privileges which the ancient guilds often enjoyed. These associations have come to understand the value of constructive work and some of them devote considerable sums annually to experimental research designed to solve the technical problems with which the industry is confronted. Thus, there is made available

to the small manufacturer scientific assistance which would ordinarily be obtainable only by large corporations maintaining their own staff of investigators. Since the Bureau of Chemistry has always regarded it as its duty not merely to report violations of the law but also to prevent violations by constructive work intended to improve methods of manufacture, it co-operates actively with such associations of manufacturers. Such co-operation by the various government agencies is bound to exert the profoundest influence on the country's industrial and social development.

The best evidence that many of the abuses formerly occurring in the food industry have ceased is to be found in the fact that the violations of the Food and Drugs Act observed today are hardly comparable with those which obtained during the first few years of the past decade. Most of the staple food products now found in violation are either of a higher grade than formerly, or are products of the clever adulterator, that is of those who have more or less anticipated the ordinary means of detection by so manipulating their products that not infrequently the adulteration can be detected only by the most detailed and painstaking chemical analysis coupled with factory inspection. In consequence there has been a decided change in the direction of the work. It has of recent years developed quite noticeably in the direction of factory sanitation, of the study of spoilage and decomposition of foodstuffs, and of the improvement through laboratory research of the methods of detecting the more refined new types of adulterations.

The Food and Drugs Act's chief contributions to the safeguarding of the peoples' health have been its effect upon the drug and patent medicine industry, upon the control of the traffic in polluted, decomposed or filthy foods and upon the elimination from foodstuffs of contamination with poisons such as lead and arsenic which entered the product because of the use of impure reagents in the process of manufacture, or of utensils constructed of improper materials.

The misbranding in regard to therapeutic value of hundreds of alleged cancer cures, of alleged cures for coughs, colds, consumption, etc., of alleged cures for diseases of the kidney, epilepsy, St. Vitus Dance, and the like, has been corrected. Unfortunately in many instances the result has been merely to transfer the false and fraudulent claims from the package to newspapers and other publicity media over which the act exercises no jurisdiction. The law requires the labels of patent medicines to declare the presence of any habit-forming drugs such as opium or cocaine or alcohol contained in them, thus preventing the innocent development of the drug habit which undoubtedly was common. This provision of the law is particularly valuable in warning mothers against the use of so-called infants' soothing sirups containing opium. It has without question done much to limit the use of medicines as tipples. In consequence of the requirement that habit-forming drugs be declared upon the label the formulae of some nostrums was changed by the reduction or even the elimination of the habit-forming agent. Drug addiction, in fact, was so prevalent that frauds in the treatment of these unfortunates became frequent. In most instances the treatment contained the very drug to which the person was addicted. Many of the purveyors of these treatments were successfully prosecuted. Similar action was taken in regard to catarrh and asthma remedies containing cocaine. When the act went into effect there were 30

soft drinks containing small amounts of cocaine, practically all of which were suppressed. There can be no doubt that the act was an important factor in aiding the passage of the Harrison Anti-narcotic Law, which more effectively controls habit-forming narcotics than is possible under the Food and Drugs Act. Much has also been done to control the indiscriminate use of so-called headache mixtures containing dangerous depressing drugs and of dangerous cosmetics making therapeutic claims. The act has vastly improved the manufacture of pharmaceuticals such as extracts and tablets, and raised the quality of the supply of crude drugs since the importations of crude drugs are examined at the ports of entry. Finally, it may be stated that much evidence obtained in connection with the enforcement of the Food and Drugs Act was submitted to the Post Office Department and resulted in the issuance of fraud orders, a more effective way of dealing with many products than prosecution under the Food and Drugs Act. Among these may be mentioned lost manhood restorers, consumption cures, cancer cures, mechanical devices referred to in medical literature as "gas-pipe therapy," weight producers and general medicine schemes by which diagnoses are made and treatment administered by mail.

The methods of handling and labeling soft drinks and mineral waters have been revolutionized. One sure index of this improvement is the fact that the cleaning and bottling machinery of five years ago today is out of date. The collection of a sample of mineral water which is contaminated is now unusual, while 10 years ago most of the samples collected were in an unsatisfactory condition. Regarding false labeling, it may be pointed out specifically that misrepresentations regarding so-called lithia waters and radioactive waters, as well as the great majority of exaggerated therapeutic claims, have been practically eliminated from the labels of these products. Today the so-called lithia waters and radioactive waters are not to be found on the market.

Much has also been done to safeguard the milk supply imported from Canada or shipped in interstate commerce. In the same manner, with the co-operation of the United States Public Health Service, the traffic in oysters polluted with sewage has been controlled. The traffic in decomposed canned fish, so-called "do-overs," has practically ceased. The shipment of decomposed canned beans and of decomposed shell eggs has been lessened. The manufacture of foods from refuse, especially tomato products, has been decreased and the sanitary conditions in food factories have correspondingly improved.

Ten years ago much of the baking powder, of the gelatin and some of the confectionery was contaminated with small quantities of lead or arsenic. This is not the case today. The coloring of canned peas with copper has been suppressed, as has the use of a number of dangerous preservatives.

Among the practices not dangerous to health that have been controlled may be mentioned the addition of water to grain, to dried fruit, to sirups, to fruit juices, to oysters, to canned tomatoes, and the like; the substitution of glucose for cane or beet sugar, of synthetic for natural products in flavoring extracts, of sugar sirup for maple sirup, and of hulls for cottonseed meal. The list might be extended vastly.

The act exercises control not merely over interstate shipments but also over imports. Indeed, it is somewhat broader in scope in its application to importations

than to domestic shipments. In the last 10 years over 100,000 import shipments have been sampled and many times that number inspected. Practically all the various violations of the act mentioned in the preceding paragraphs have also been dealt with in connection with importations.

While the accomplishments of the Food and Drugs Act have been considerable, it must be admitted that it has its serious limitations. Especially conspicuous ones are the lack of legal standards for foods, of authority to inspect warehouses, and of any restriction whatever upon the use of many of the most virulent poisons in drugs; the limitations placed upon the term "drug" by definition which render it difficult to control injurious cosmetics, fraudulent mechanical devices used for therapeutic purposes, as well as fraudulent remedies for obesity and leanness; the limitation of dangerous adulterants to those that are added so that the interstate shipment of a food that naturally contains a virulent poison is unrestricted. Furthermore, the law fails to take cognizance of fraudulent statements covering foods or drugs which are not in or upon the food or drug package. Greater flexibility to prescribe the disposition of imports is also desirable. The Secretary of Agriculture has at one time or another recommended legislation to fill most of these gaps in the law. It should also be noted that at present there is no federal law which prohibits unregistered or unlicensed persons from sending into interstate commerce medicinal agents, poisons, and the like, although they can not be sold locally by them nor indiscriminately even by registered or licensed pharmacists or physicians.

The constitutionality of the act has been questioned repeatedly without success. These cases and many others have clarified the significance of most of the provisions of the act, though certain other provisions, such as those dealing with "compounds," "blends," and "imitations," and the recent amendment requiring that foods in package form be labeled with the quantity of the contents of the food in the package still await complete interpretation by the courts.

Many matters of procedure have been fixed by the courts. Thus, in *United States v. J. Lindsay Wells Co.* (186 Fed. 248) and in *United States v. Baumert et al.* (179 Fed. 735), it was held that in cases under section 2 of the act the procedure may be by information, a practice that has been followed since 1909-10, although the first cases under the act were brought by indictment in 1907-8. In *United States v. 443 Cans of Frozen Egg Products* the Supreme Court held that cases *in rem* arising under section 10 of the Food and Drugs Act, after the filing of the libel and seizure of the goods, are common-law actions and subject to review only upon writ of error, in accordance with the rules of common law. In *United States v. 5 Boxes of Asafetida* (181 Fed. 561) it was held that section 10 of the act defines fully when and under what circumstances foods and drugs shall be forfeited, and is separate and distinct from section 2, and it is unimportant in forfeiture proceedings whether a person on the same statement of facts could be convicted under section 2. Liability to seizure was held to depend upon whether the articles are adulterated or misbranded at the time of seizure, in addition to being adulterated or misbranded at the time of interstate shipment. In *United States v. Morgan* (220 U. S. 274, Office of the Solicitor Circular 58, Notice of Judgment 1992), the Supreme Court held that the notice

and hearing required to be given parties from whom samples of food and drugs are procured by the Department for purposes of investigation are not jurisdictional facts, and consequently it is not essential that they be alleged in an indictment or information, and so need not be proved at the trial of the cases. In *United States v. J. L. Hopkins Co.* (199 Fed 649, Notice of Judgment 2436) it was held that jurisdiction exists in the Federal Court of the District from which the goods were shipped, even though the defendant did not reside in that District. The court also held that violations of the Food and Drugs Act are subject to the general statute of limitations and that immediate prosecution is not required by section 5 of the act.

With reference to what constitutes an interstate shipment, it was held in *Philadelphia Pickling Co. v. United States* that a shipment by the manufacturer from his place of business in one state to his place of business in another state for testing of an adulterated article constituted a violation of the Food and Drugs Act. In *United States v. Powers-Weightman-Rosengarten Company*, a case under the Insecticide and Fungicide Act, a law which in general is analogous to the Food and Drugs Act, it was held that it is not an interstate shipment if goods in passing from one point in a state to another point in the same state traverses through another state. (Insecticide and Fungicide No. 75, Dom. No. 1055.) In *Hippolite Egg Co. v. United States* (220 U. S. 45, Notice of Judgment 1043) it was held that adulterated articles of food which have been transported in interstate commerce are subject to seizure and condemnation as long as **they remain** in the condition in which they were transported, that is, "in the original, unbroken packages."

The validity of the guarantee section, section 9 of the act, was upheld in *United States v. Charles L. Heinle Specialty Company* (Notice of Judgment 389, Circular 29, Office of the Solicitor), and in *United States v. Mayfield, et al.* (177 Fed. 765, Notice of Judgment 326). In the latter case it was decided that the guaranty is available to a dealer only when it relates to the identical article shipped by him and affords no defense to him when the guaranty relates only to a constituent used by him in manufacturing the article shipped; and further, that the officers of a corporation which manufactured an adulterated or misbranded food product shipped by its manager in interstate commerce are subject to prosecution therefor when they authorized the manager to operate the plant and sell the product without restriction, and the previous course had been to ship on orders to other states. In *Steinhardt Bros. Co. v. United States* (191 Fed. Rep. 798, Office of the Solicitor Circular 57) it was held that the guaranty contemplated under section 9 of the Food and Drugs Act to afford protection to the party making an interstate shipment of the adulterated or misbranded article must have been given prior to such shipment. In *Glaser, Kohn and Company v. United States* (Circular 84, Office of the Solicitor, 224 Fed. 84) it was held that a guaranty in the form a letter, expressed to be good until revoked on all articles sold continued to be good until revoked.

In accordance with the regulation originally made for the administration of the act it became the custom for manufacturers to place upon their labels the legend "Guaranteed by under the Food and Drugs Act, June 30, 1906." In 1913-14 the regulations were amended so as to require the cancellation of general guaranties filed with, and serial numbers assigned by,

the Department and to prohibit the use upon labels of the above legend on the ground that the use of the legends and numbers upon packages of food and drugs conveys the false and misleading impression to the public that the articles have been examined and approved by the Government and that the Government guarantees that they comply with the law.

The term "original unbroken package," it has been held, is to be taken in its broad sense, and mean a package made up by the manufacturer for sale to the ultimate consumer. The word "package" as used in sections 7 and 8 of the act is distinct from the term "original unbroken package" as used elsewhere in the act (*Dr. J. L. Stephens Company v. United States*, Notice of Judgment 2511, Circular 72, Office of the Solicitor). This decision is supported in effect by the decision of the Supreme Court in the State of Wisconsin *v. McDermott* (*McDermott v. State of Wisconsin*, 143 Wis., 18; 228 U. S., 115), a case not conducted by the Federal Government. In *United States v. 5 Boxes of Asafetida* (181 Fed. 561) it was decided that the taking of samples by claimant for the purpose of examination did not destroy the commercial form of the packages and did not incorporate the goods with the property of the state so as to remove them from the jurisdiction of the act over original packages.

With reference to the adulteration and misbranding of foods the following cases are of special interest. It was held in *United States v. Lexington Mill and Elevator Company* (232 U. S. 399, Circular 79, Office of the Solicitor) that an article of food is adulterated if, because of any added poisonous or deleterious ingredient, it may by any possibility injure the health of the strong or the weak, the old or the young, the well or the sick, or any of these, or, conversely, that an article of food is not adulterated, within the meaning of the provision of the act by which an article is declared adulterated, "if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health," "if it can not by any possibility, when the facts are reasonably considered, injure the health of any consumer," even though it contain "a small addition of poisonous or deleterious ingredients." The same provision of the act was further construed by the Supreme Court in *United States v. 40 Barrels and 20 Kegs of Coca Cola* (241 U. S. 265; Circular 86, Office of the Solicitor) in holding that the caffeine in Coca Cola is an "added" ingredient within the meaning of the act contrary to the opinion of the Circuit Court of Appeals, which had held that a mixture or compound sold under its own distinctive name is not adulterated because it contains as one of its normal ingredients a poisonous or deleterious substance, since such poisonous or deleterious substance is not added to the article within the meaning of the provision, but is a part of it. In *United States v. American Chic Company* it was held, in effect, that where an article contains but a trace of a valuable ingredient it is misbranded if named after that ingredient. In *United States v. 7 Cases of Buffalo Lithia Water* (Circular 78, Office of the Solicitor) a similar principle is involved. An article labeled "Buffalo Lithia Water" was condemned as misbranded on the ground that the article did not contain sufficient lithium to entitle it to be labeled "lithia water." In *Hudson Manufacturing Company v. United States* (192 Fed Rep. 90, Notice of Judgment 1451) it was held, in effect that the use of a designation without well-known trade meaning for an imitation food product without giving any

indication of what the article is composed, shows a clear case of misbranding. In *United States v. Charles G. Dade* it was held that the presence of *Bacterium coli* and *Streptococci* in milk in certain cases indicated decomposition or the presence of fecal matter which rendered the milk filthy. Analogous decisions have been reached with reference to the pollution of oysters, the decomposition of tomato products, of beans, and of other foods, although the action of the courts has not always been uniform. In *William M. Galt and Company v. United States* it was held that the presence of worms in flour rendered it adulterated because it was "filthy" within the mean of that word as used in the act, "even conceding that the worms, insects and beetles could be separated therefrom, the flour would still be contaminated by reason of its contact with them and would still contain more or less husks and excreta from the worms; that is, it would still be filthy within the meaning of the act." In *United States v. 13 Crates of Frozen Eggs* (208 Fed. 950, Notice of Judgment No. 2859) it was held that the act prohibits the transportation in interstate commerce of filthy, decomposed, or putrid eggs, and that such eggs, which have not been denatured, may be seized and condemned, even if the shipper intended them to be used for tanning, not for food purposes.

With reference to the adulteration and misbranding of drugs, the following are some of the more important decisions: In *United States v. Sixty-five Casks of Liquid Extract* (170 Fed. 449; Notice of Judgment No. 284) the claimants contended that the quantity or proportion of the drugs specified in section 8 of the act need not be declared in case of drugs which are not labeled or branded. The court ruled adversely to this contention, deciding, in effect, that the act not only requires that drugs shipped in interstate commerce and labeled shall not be misbranded, but requires that they shall bear labels conforming with its provisions. In *United States v. Antikamnia Chemical Company* (231 U. S. 654; Circular No. 76, Office of the Solicitor) the Supreme Court sustained the validity of a regulation which requires that, in declaring the quantity or proportion of derivatives of any substance specified in section 8 of the Food and Drugs Act, the name of the specified substance, in addition to the trade name of the derivative, shall be stated. It was held, further, that the act itself requires that the name of the speci-

fied substance be stated if the article contain a derivative of it. In *United States v. Lehn and Fink* (Circular No. 49, Office of the Solicitor) it was held that section 7 of the act which declares a drug to be adulterated if it "differs from the standard of strength, quality or purity as determined by the test laid down in the United States Pharmacopœia * * * official at the time of investigation," is not ex post facto legislation. It was further held that Congress in enacting this section did not delegate legislative power, but merely prescribed the method of ascertaining facts upon which the operation of the statute was to depend. In *Dr. L. J. Stephens Company v. United States* (Vid. Supr.) it was held that physicians' prescriptions are not exempt from the operations of the act.

United States v. Johnson (221 U. S. 488; Notice of Judgment No. 1058) was decided adversely to the Government. In this case misbranding was alleged of a so-called "mild combination treatment for cancer," consisting of several packages bearing statements that the treatment would effect the cure of cancer. It was held, in effect, that false and fraudulent statements as to the curative or therapeutic effects of medicines did not come within the prohibition of the law. The President thereupon addressed a message to Congress urging remedial legislation. On August 23, 1912, the act was amended (37 Stat. 416). The constitutionality of this amendment has been attacked without success.

On March 3, 1913, the act was further amended so as to require articles of food in package form to bear a statement showing the quantity of the contents in terms of weight, measure or numerical count (37 Stat. 732).

On June 16, 1913, rule 39 of the rules and regulations made for the enforcement of the Food and Drugs Act was repealed. Under that rule domestic meat and meat-food products which were prepared under federal inspection were exempted from the provisions of the Food and Drugs Act. As a result of the repeal, the power of seizure of unsound meat and meat-food products in the course of interstate commerce can be and has been exercised. Under the Meat Inspection Act spoiled meats could be condemned and destroyed only when they were found within establishments in which federal inspection was maintained.

National Confectioners to Convene.

From May 7th to 10th, the Thirty-fifth Annual Convention of the National Confectioners' Association will take place at the Edgewater Beach Hotel in Chicago.

American Public Health Association Meeting.

The next meeting of the American Public Health Association will take place in Chicago, October 14 to 17, 1918. The central theme of the meeting will be: "The Health of the Civil Population in War Time."

New Jersey Bills.

Two bills recently approved by the Governor of New Jersey provide for: an extension of the provisions of the oyster act, relating to planting and gathering of oysters, to the tidal waters of the entire state; the releasing of closed grounds by the State Board of Shell Fisheries so that shellfish may be removed to unpolluted waters.

Errata.

On page 125 of the March issue of this JOURNAL, in the article on "The Ash of Our Foods," by George L. Teller, the word "twice" should be substituted for "half" in the second paragraph of the right-hand column: if our 700 grams of nutrition were made up wholly of graham flour, "we should have *twice* the amount which the body requires."

In the article in the March issue of this JOURNAL entitled "Adjusting America's Liquid Milk Supply to Suit Seasonal Demands," by Robert G. Soule, the explanatory notes under the diagram at the foot of page 134 in some of the copies first run off the presses are defective. They should read as follows:

Equivalent to
4,000 Gals. 3.5% Milk
\$130.00
\$.0325 Per Gal.

A New Development in the Transportation Problem

IN HIS book, *Food in War Time*,* Dr. Graham Lusk sounds the note of the new dietetics by quoting Dr. E. V. McCollum's theory of the dietetic value of green vegetables: the Italian peasant of southern Italy lives mainly on corn meal, olive oil and green stuffs; not merely does he manage to exist but he thrives; the poor quality of the protein in the corn and the poor quality of the olive oil as a fat are supplemented by those peculiar accessory substances, *fat soluble A* and *water soluble B*, which exist abundantly in leafy vegetables. The value of fruit in the diet has always been recognized.

Along with the problem of supplying fruits and vegetables for our tables goes the problem of their transportation. Between the grower and the consumer stretches a long road, at any point of which all sorts of mishaps and delays may occur. When one considers that the cost of freightage and refrigeration in marketing a California orange in the East is approximately 20 per cent, or one-fifth, of the total cost of the orange, while the grower receives only 26 per cent, a little over one-fourth, of the total cost,¹ it is obvious that transportation is an important part of the problem of a food supply.

Lucius P. Brown, director of the Bureau of Foods and Drugs of the New York City Health Department, in his recent address before Franklin Institute,² discussed in detail the wastes involved in the handling of foodstuffs, citing the historic example of the waste in marketing eggs, and quoting such instances of poor packing and transportation methods as the case of three cars of potatoes which were "packed and shipped while wet into double-headed barrels, insufficiently ventilated, and therefore heated while in transit." One solution of the transportation loss Mr. Brown believed to lie in the co-ordination of the railways under federal control, making all terminals available to all railroads and thus causing prompter deliveries and shorter hauls.

One of the most significant developments towards the solution of transportation problems—a development which has a close relation to the pooling of the railroads under federal control, was the recent formation, at a convention of the Western Fruit Jobbers' Association at New Orleans, of an organization known as the American Fruit and Vegetable Shippers' Association. The membership of this association is confined to carlot shippers selling to the wholesale trade only. Such a move has been under way for several years and was due to the efforts of Roy Campbell, the "onion king" of Texas, E. P. Miller of Albert Miller & Company, Chicago, A. U. Chaney of New York, and a few other prominent shippers. At the organization meeting E. P. Miller was made president and Louis Blot of the Spokane Fruit Growers' Company, temporary secretary. The first Board of Directors consisted of Roy Campbell, John Nagle of California,

A. U. Chaney of the American Cranberry Exchange of New York City, and W. H. Garvin of Colorado.

In the early part of February the Association secured as business manager and active secretary R. L.



R. L. Evans.

Evans, who since September had been connected with the Illinois Division of the United States Food Administration, in charge of traffic problems and other matters pertaining directly to the fruit and vegetable industry. Mr. Evans is 42 years old, a graduate of Yale University. After leaving college he was connected with the grain and lumber business in Minneapolis, and from there he went East to become traffic manager for large steel and iron interests. Later he did considerable work for the New York, New Haven & Hartford Railroad in the way of preparing and handling special traffic and demurrage matters. He came to Chicago in 1908, was in the manufacturing business for two and a half years, and then in the securities and investment business, with which he was identified until he took up his work with the Food Administration. Mr. Evans, both by temperament and training, is well qualified for his present responsible position. It was he who presided at the meeting between the fruit and vegetable trade and the Food

*Food in War Time, W. B. Saunders Co., Philadelphia, 1918. p. 8.

¹The Marketing of Farm Products, L. D. H. Weld, Ph. D., The MacMillan Co., N. Y., 1916; p. 215.

²Reported in the February issue of this Journal, p. 77.

Administration, and had charge of the four committees appointed as a result of that conference, on whose reports and recommendations were largely based the revised rules and regulations issued by the Food Administration early in February.

At the outset it was made clear that the new association would in no way affect the jobbers' associations, the new organization's purposes as stated being "to promote all matters consistent with the established business principles of the fruit and vegetable shipping business." The objects of the Association are briefly summarized as follows:

First: To co-operate with the Director General of Railways and the railways of the country in every way possible to get improved facilities for the handling of perishable foods; to work out the best plan for the distribution of proper refrigerator equipment and to facilitate its movement; to co-operate in standardizing such equipment and its movement; to co-operate in standardizing policies with reference to railway claims, diversions and routing privileges throughout the country; for the shippers, as a national organization, to help the railroads in working out problems of mutual interest.

Second: To co-operate with the United States Food Administration in conserving and distributing food products, and in improving facilities for distribution, and to carry out the spirit of the Food Administration in the most capable manner possible.

Third: To work in co-operation with the United States Department of Agriculture, its Bureaus and all government and national agencies, in establishing: national grades, a national inspection system, and improved standardization of trade inspections, that will facilitate the marketing and distribution of perishable food products, with the least possible waste, the least possible delay and in the most economical manner, between producer and consumer; and to co-operate with the Department of Agriculture in encouraging production, standardization of grades, and equitable, economical distribution.

Fourth: To promote, protect and improve in every possible way the interests of the fresh fruit and vegetable industry.

The Association already comprises nearly a hundred members, among them such representative organizations as the following: The American Cranberry Exchange of New York City; The Associated Fruit Company of Chicago; The Boyle Company, Wichita, Kansas; The California Fruit Distributors, Sacramento; The California Fruit Exchange, Sacramento; The California Vegetable Union, Los Angeles; Roy Campbell, San Antonio, Texas; Chase & Company, Jacksonville, Florida; Crockett & Weil, Alexandria, La.; Crutchfield & Woolfolk, Pittsburgh; Denny & Company, Chicago; Earl Fruit Company of the N. W., Spokane; The Eastern Shore of Virginia Produce Exchange, Onley; The Ennis-Brown Company, Sacramento; The Florida Citrus Exchange, Tampa; Flory & Albers, San Antonio, Texas; The Z. J. Fort Produce Company, Denver; Oscar Frommel & Brothers, New York City; The Fruit Dispatch Company, New York City; W. H. Garvin, Delta, Colorado; The C. A. Kerr Company, Chicago; Leonard, Crosset & Riley, Cincinnati; Albert Miller & Company, Chicago; The Chas. F. Murphy Company, Chicago; Mutual Orange Dis-

tributors, Redlands, California; The National Fruit Exchange, Los Angeles; The Northwestern Fruit Exchange, Seattle; M. Piowaty & Sons, Chicago; The Randolph Marketing Company, Los Angeles; The H. C. Schrader Company, Orlando, Florida; The P. S. Scott Company, Philadelphia; The Spokane Fruit Growers' Company; Steinhardt & Kelly, New York City; The Stewart Fruit Company, San Francisco; L. J. Upton & Company, Inc., Norfolk, Virginia; White Brothers & Crum, Lewiston, Idaho; Yakima County Horticultural Union, Yakima, Washington; Yakima Valley Fruit Growers' Association, Seattle; American Fruit Distributors, Los Angeles; Dr. P. Phillips, Orlando, Florida. Applications for membership are being received constantly.

Four bulletins had been issued by the Association up to April 1. The first was a compendium of the rules and regulations of the United States Food Administration which affect wholesalers, shippers and distributors of fresh fruits and vegetables, up to date of January 31, 1918, with comments and suggestions thereon. The second consisted of the report and recommendations of the Traffic Committee of the Association, dated March 8, 1918, the result of conferences with the Assistant to the Director General of Railways in charge of Traffic and railroad representatives, and discussed the subjects of diversion and reconsignment, routings, passing notices, observance of bill of lading notations, loading to capacity, refrigeration car charges, distribution of refrigerators under one National Refrigerator Division head and methods of getting in requirements ahead, the necessity of a definite regular schedule, fair and just rates established and reviewed as provided for in the Act to Regulate Commerce, cooperage and shocks, claims, and proper advance notice of embargoes. It is worthy of note that the proposal of a head of a National Refrigerator Division is made possible by the co-operative handling of the railroads under government control. Such a proposal is in line with the drastic measures made possible by the exigencies of war times. The third bulletin of the Association was on the subject of claims, and the fourth called the attention of members to a book on plant diseases in transportation.

Besides the various activities indicated by these reports the Association has arranged for a conference to be held some time in May with representatives of the Freight Claim Association, at which the entire industry will be represented; very definite advances have been made along the line of trade relations and co-operation with the Government; especially noteworthy are the efforts of the Association to effect a proper distribution of cars in territories where there is immediate need of them for the transportation of perishable food products. That the recommendation of the Association weigh strongly with the Government is evidenced by the nature of many official promulgations. The Association members control 300,000 refrigerator cars and the Association is, with the exception of the meat packing industry, the largest user of refrigeration in the country. The annual dues are based upon the member's car shipments, ranging from \$50 for shipments up to 250 cars annually to \$500 for annual shipments of more than 5,000 cars. All joining previous to July 10, 1918, are considered charter members; after that date there will be an initiation fee of \$25.

Penalties Under Food Control Act

The Food Administration has issued the following:

Three unlicensed retail grocers of Pittsburgh—M. Shapiro, B. Block, and Sam Gelman—have had their supplies of licensed food commodities cut off by order of the United States Food Administrator because of making unjust and unreasonable charges in handling and dealing in necessities. This order has been sent to all persons in Pennsylvania, Virginia, and Ohio holding licenses under the food control act, forbidding them "in anywise to deal with, buy from, sell to, or make any sale or agreements for the sale of any licensed commodity directly or indirectly to" the parties concerned.

This case presents the first instance in which it has been necessary for the Food Administration to exercise its power of indirect control over the retailer doing a business of less than \$100,000 a year. The State Food Administrator of Pennsylvania is authorized, at his discretion, provided these retailers comply with the rules of the Food Administration, to revoke this order of the Food Administrator.

Clear cases of profiteering in sugar have been made out against each of the accused. Sam Gelman, although conducting only an ordinary retail grocery and fish business, about November 26, when the sugar shortage was acute, purchased over 25,000 pounds of beet sugar at prices running from \$7.66 to \$7.86 per 100 pounds, and sold practically all of this sugar in wholesale quantities to manufacturers at prices far beyond the retail price at the time prevailing in Pittsburgh. One lot of 11,500 pounds he sold at 14 $\frac{1}{4}$ cents per pound, and the rest at prices running from

Although the retail and the wholesale dealer in food 12 $\frac{1}{2}$ cents to 13 $\frac{3}{4}$ cents per pound.

commodities doing a business of less than \$100,000 a year is not licensed, the Food Administration can control his supply of foodstuffs. Where deliberate evasion of the food control act is shown the Food Administration, by shutting off the dealer's supply, can effectively eliminate the unfair and unpatriotic from the competitive field of business.

The Food Administration has announced the first suspension of license by which it has penalized a wholesale shipper of foodstuffs. The Weil-Zuckermann Company, of San Francisco, Cal., carlot shippers of potatoes and onions, is forced to suspend operations at its Fort Worth, Tex., branch from March 1 until March 31. The penalized company appealed some time ago to the Food Administration to force several concerns which had contracted for shipments to accept them upon delivery. It claimed that these consignors were allowing foodstuffs to rot. As a result of the investigation, the Food Administration found that the shipper was guilty of unfair business practices. Appealing for help from the Food Administration, it was given instead a severe penalty.

Several firms to which the potato and onion concern had shipped refused to accept the consignments, claiming that the goods were in bad order. As an emergency measure, the Food Administration finally secured from the Weil-Zuckermann Company a promise that if the shipments were accepted any losses due to inferiority of goods would be rebated. The consignors agreed to this arrangement. After the shipments had been accepted, the company went back on its agreements, neglecting to make any allowances.

Further investigation showed that it had wittingly shipped goods which were not in good condition. It was shown that

deterioration had already started when some of the shipments were forwarded. The investigation showed, too, that it had accepted a contract for California onions, made out bills for California onions, and then had shipped inferior onions in no way resembling the article for which the contract called.

In its defense, the Weil-Zuckermann Co. admitted all the offenses and claimed that the practices of its Fort Worth branch were due to the "over technical" attitude of its local manager. The company claimed that it was endeavoring to support the Food Administration and when it asked for assistance in bringing recalcitrant patrons into line was actually under the impression that the consignees were not at fault.

The Weil-Zuckermann Co. is one of the biggest food shippers in the West. It does an annual business of about \$6,000,000, and operates branches at Los Angeles, Stockton, and Fresno, Cal.; Portland, Ore.; Wapheo, Toppenish, and Fort Worth, Tex.; Idaho Falls, Twin Falls, Shelly, and Filer, Idaho; Denver, Colo.; and Chicago.

Failure to bake Victory bread containing at least 20 per cent wheat substitutes as now required by the Food Administration has proved an expensive practice for the Specialty Baking Company of New York City.

Action against the company, which was threatened with revocation of its license, has been suspended in consideration of the fact that it voluntarily contributed \$1,000 to the Red Cross, and has given its assurance that in the future it will comply strictly with the rules and regulations of the Food Administration.

Officers of the company admitted the violation and submitted an accurate record of the company's sales. The Federal Food Board of New York with the approval of the Food Administration accepted its offer to give the Red Cross the benefit of any unfair profits it had effected by its failure to observe the baking regulations.

The U. S. Food Administration announces that it has authorized the seizure of large stores of wheat held in New Mexico by men of German extraction. They have consistently refused to sell at the ruling price, which was fixed by the Government, and have given no satisfactory explanation of their action, although they have been urged to release it in order that the United States may maintain its program of exportation.

An estimated report placed the production of these two men—brothers trading as farmers and storekeepers under the name of Kempenich Bros.—at about 100,000 pounds. In addition to this, the Federal Food Administrator for New Mexico reported they had purchased about 250,000 pounds, which they also refused to release from storage.

The Food Administration has taken the position that by withholding this wheat from the trade Kempenich Bros. are guilty of giving aid and comfort to the enemy. On this ground it has authorized the New Mexican Administrator to seize the entire supply and place it in circulation.

Reports on several similar cases have been received, but no definite action has been taken except in this one instance. The Food Administration has announced, however, that where investigation shows unpatriotic intent the wheat will be seized. Allowances will be made for what is needed for seeding purposes and personal use.

For several violations of the Food Administration's regulations, the Moneyworth Wholesale Grocery Company, Chicago, Illinois, had its business suspended for the entire week beginning March 4. The Moneyworth Company was founded guilty of forcing combination sales with sugar, wilfully substituting other goods when filling specific orders. At the hearing it was shown that the company frequently sent larger quantities than were ordered of those things on which it made excessive profits.

The Mount Morris Co-operative Elevator Company, of Mount Morris, Michigan, is the first corpora-

tion to lose its license for violating the rules which require the sale of substitutes with all purchases of wheat flour. The Federal Food Administrator for Michigan had notified the company that it would be required to observe the rules. He advised the Food Administration that the penalized corporation continued to violate the regulations after he had given them due notice. The revocation became effective March 2.

The Food Administration has arranged to take over every pound of flour that the Copeland Grocery Company, of Elberton, Ga., has in its warehouse, and distribute it to dealers in Atlanta and nearby points. It was found that the company had 5,000 barrels of flour. Only 200 barrels were needed to supply its normal needs for 30 days. In addition to putting this flour in circulation the Food Administration will probably take other measures to penalize the company for this apparently clear case of hoarding.

The license of the New Orleans Branch of Morris and Company has been revoked for seven days by the Food Administration on recommendation of the Louisiana Food Administrator. The specific charge was making excess profits on corn meal, corn grits and other corn products. At a hearing before the Louisiana Administrator representatives of the firm did not dispute the facts contained in the charges. It was pointed out, however, that the excess profits were not large nor were the quantities on which the profits were made large. The firm has been ordered to suspend business for seven days, beginning April 8. In the meantime satisfactory proof must be given that all excess profits have been refunded.

Swift & Co. have been ordered to suspend all dealings in eggs in New York City for 30 days from midnight of April 10, and Zinn & Co., of New York City, through whom Swift & Co. purchased 12 carloads of cold-storage eggs at excessive prices, will be forced to suspend all dealings in eggs in New York City for 7 days from midnight of the same day. Both corporations will donate to the American Red Cross, United States Liberty Bonds equivalent to the unjustified amounts involved in the transaction. The Food Administration announces that it had approved the findings of the Federal Food Board of New York City, and issued an official order compelling the big packing concern and its brokers to suspend operations in eggs.

The Food Administration issued a statement covering its positions in both cases:

"There is no evidence that Swift & Co. were guilty of profiteering; but while they may not themselves have been profiteers, they bought 12 carloads of storage eggs from a profiteer at a price which they knew gave the seller an unreasonable profit, and with full knowledge that the Food Administration had ruled that the profit, and therefore the price, was unreasonable. By making the purchase they assisted the seller to profiteer, and, although they made no excessive profit themselves, they were the medium by which the excessive charge of the seller was passed along to the consumer.

"They evidently thought that the responsibility was upon the party who made the excessive charge, and not upon the party who paid it; but in as clear a case as this we shall not hesitate to penalize both parties.

* * * * *

"Zinn & Co., of New York City, were the brokers through whom Swift & Co. purchased 12 carloads of storage eggs from Wood & Co., of Moulton, Iowa. The price paid leaves to Wood & Co. an excessive profit. The cost and reasonable profit margin upon eggs of this character had been the subject of much discussion by the egg trade of Chicago, Boston,

and New York in conjunction with the Food Administration. The results of this discussion and the rulings of the Food Administration were perfectly well known to all parties. Zinn & Co. made no excessive profit themselves, and it is evident that they felt that this fact relieved them from responsibility.

"We approve the findings of the Federal Food Board in this case, but prefer to change slightly the form of the penalty. Instead of 30 days' suspension from dealing in eggs, we direct a suspension from dealing in eggs in New York City of seven days beginning midnight April 10, 1918. * * *

James Kuth, of New Paris, Ohio, has been ordered to suspend business as a retail grocer for the entire week of April 10 and C. S. Hetherington, a retailer, at Columbus, Ohio, will close his store throughout the day of April 10. Both will be required to post notices in their windows stating that they were closed for violating the Food Administration's regulations which require the sale of one pound of other cereals with every pound of wheat flour purchased.

In a statement to the Federal Food Administrator for Ohio, Kuth declared that he would demonstrate his loyalty and patriotism by turning over to the Red Cross all profits from his business every Tuesday.

These are the first two cases of this nature which have been prosecuted in Ohio. Although retailers are not required to operate under a license, their supplies may be cut off through the licensed wholesalers. The Ohio administrator decided not to resort to more drastic provisions of the food control act by shutting off supplies, but instead to have them close their stores temporarily.

Six North Carolina flour mills will suffer for failure to observe Food Administration rules and regulations. Charges brought out at a hearing before the North Carolina Federal Food Administrator in Raleigh, N. C., were that they exacted excessive prices for mill feeds, that some of them failed to extract flour at a rate which would give 196 pounds for every 264 pounds of wheat, and that some of them had failed to submit monthly reports to the Food Administration.

The Kernersville Roller Mill, at Kernersville, was operating without license and will not be allowed to do further business. The Forsyth Roller Mills, at Winston-Salem, lost its license for the period of the war, the revocation effective at midnight of April 10. The other four, closed from April 10 until April 17, were the China Grove Roller Mills, China Grove; Ludwick Milling Co., Saulsbury; Grimes Milling Co., Saulsbury; and Hendrix & Son, Kernersville.

Disregard of the "50-50" regulations, selling in unreasonable quantities and failure to procure a Food Administration license have caused the Food Administration to order the Chaska Flouring Mill, of Chaska, Minn., to suspend operations for 30 days from April 15. The mill will be allowed to apply for a license after May 15 on condition that it immediately takes back all excess quantities of flour sold since November 1, 1917, procures the purchase of substitutes omitted from its sales since February 1, and gives assurances that it will in the future observe all Food Administration rules and regulations.

In a hearing before the Federal Food Administrator for Minnesota it was shown that the Chaska concern's March flour sales had increased about fifteen-fold over sales for a corresponding period last year. Many of these sales—supposedly at retail—were in quantities of several hundred pounds, in some cases even more than a thousand pounds.

An Important Gathering of Dairymen

BELIEVING that there is no longer need for widespread conservation of dairy products the dairymen of America, in convention assembled, recently pledged the dairy industry to an aggressive campaign the purpose of which is to be an increase, rather than a decrease, in the consumption of dairy products.

The resolutions passed by an assemblage of about 150 representative dairymen follow:

RESOLUTIONS UNANIMOUSLY ADOPTED AT A CONFERENCE
OF THE NATIONAL DAIRY INDUSTRY HELD IN
CHICAGO, APRIL 12TH AND 13TH, 1918.

Whereas, as a result of conditions existing in the earlier part of 1917 and which now no longer exist, a widespread belief has been created in the public mind that it is necessary to conserve and save milk and dairy products by the use of substitutes and other means, and

Whereas, owing to such changed conditions as to supply and the lack of shipping facilities for exporting condensed milk, butter and cheese, as well as the extensive and pernicious advertising campaign now being carried on by those engaged in the manufacture of so-called butter substitutes, in which advertisements it is unjustly asserted that by using such substitutes the consuming public will be observing the requests of the Food Administration, all of which is being done without the approval of authority of the Food Administration, and

Whereas, as a result of such conditions and efforts there is accumulating a vast supply of dairy products which endangers an industry vital to the present food supply of the world, as well as irreparable injury to an industry vitally essential to the future of agriculture, and if this injury is not prevented there will be removed from the world the last source of supply of dairy products, as the Dairy Industry in other nations has been largely destroyed as a result of the war, and

Whereas, scientific experiment and demonstrations which do not leave the slightest doubt as to their accuracy and correctness clearly show that a lack of this very essential human food will result in deterioration of the human race, and

Whereas, unless the consuming public can be given to understand that a liberal use of milk and dairy products is now permissible in connection with food conservation, these accumulating stocks of dairy products will seriously endanger their future supply by reason of the discouragement of dairy farmers in their further effort for production, now therefore

Be It Resolved, First: That we, representing the producers, manufacturers and distributors of milk and milk products from all parts of the United States, do earnestly request the Food Administration to make public announcement that for the present there is no longer need of curtailment of the use of milk and milk products, but on the contrary the consuming public should use, as far as possible, these essential foods, and that the menu cards on dining cars and in hotels be changed as to milk and milk products so as to conform to such request.

Second—We hereby pledge to the Food Administration and the United States, during the period of the war, that those engaged in producing, manufacturing and distributing milk and its products will continue

to demand only the cost of their operations, plus a reasonable profit, to be approved if necessary by the Food Administration or the Government.

Third—That such steps be taken by those in control of procuring food for the Army and Navy that the boys in service shall be supplied with butter, so essential to physical vitality, instead of oleomargarine and other substitutes.

Fourth—We request those in charge of food for the Army place cheese in the Army food ration.

Fifth—We voice the conviction that the time has come when there should be necessary federal and state legislation authorizing and encouraging the formation and operation of co-operative associations of farmers, formed for the purpose of making collective sales of their farm products, to the end that there may be economies in production and in marketing, and the elimination of unnecessary speculation.

Sixth—That we respectfully request the Secretary of Agriculture to take such action, by recommendation or otherwise, as will create in his Department, a Bureau of Dairying.

Seventh—That it is of supreme importance that the production and storing of butter and cheese should be stimulated and encouraged in every possible way during the summer season of heavy production, to the end that we may have large reserve stocks to meet the demands of our Allies and our own people during the season of short production.

(a) The greatest problem of this conservation will be one of financing.

(b) Wheat can be controlled and all speculation prevented because it is not perishable and can be held by the producers until needed by the mills.

(c) Milk is a perishable product and must be purchased by the creamery, made into butter or cheese and started on its way to the consumer or the cold storage as fast as produced.

(d) The ability of the creamery to perform this service is dependent on its ability to get its money out of it promptly. This means that there must be sufficient capital waiting to finance the crop as it comes. The amount of capital available for this purpose will depend on the possibilities of profit in the investment and the kind of regulations and restrictions imposed on the business by the Food Administration which may affect the possibilities of profit.

(e) The cold storage houses are following a rule limiting the loans on butter or cheese placed in storage to 70 per cent of the value of the product. This will limit the storing ability of each person to about one third of the amount of previous years, thus increasing the difficulty of harvesting our summer crop.

(f) In view of this situation we believe it is very necessary that our Food Administration should give this matter serious consideration and do all in their power to encourage the investment of capital in the coming butter and cheese crop to the end that we may accumulate the reserve stocks necessary to the future.

The meeting at which the foregoing resolutions were passed was called by the presidents of the National Dairy Council, the National Dairy Union, the National Federation of Milk Producers, the American Association of Creamery Butter Manufacturers, the National Association of Creamery Butter Manufacturers, and

the International Milk Dealers' Association, the call for the conference having pointed out the critical situation in which the producers of milk find themselves at the present moment.

The conference was called to order Friday forenoon, April 12, in the Hotel Sherman, Chicago, by Mr. W. E. Skinner, secretary of the National Dairy Council, Mr. D. D. Aitkin, president of the Holstein-Friesian Breeders' Association of America being made permanent chairman, with Mr. Skinner serving as secretary. Mr. Aitkin outlined the situation confronting the dairymen and made several suggestions as to what sort of action should be taken by the meeting before it adjourned. He stated that in his opinion 99 per cent of the women in this country regard milk as nothing more important than a beverage—one of the many soft drinks. He counselled an educational campaign which should have as its purpose the dissemination of knowledge as to the dietary value of milk, each milk producer of commercial milk to be assessed at the rate of 1 per cent per hundred pounds, ending his introductory speech with a eulogy of the cow in her capacity of transforming roughage to food.

Following Mr. Aitkin's talk, a committee on credentials was appointed consisting of Mr. G. L. McKay, secretary of the American Association of Creamery Butter Manufacturers, and Mr. W. T. Creasy, secretary of the National Dairy Union.

Mr. Milo D. Campbell, president of the National Federation of Milk Producers, was the next speaker, and he suggested as a method of operation that the meeting lay the facts before the various farmers' organizations throughout the country and appeal to them for assistance, making a further suggestion that those who were in position to do so should endeavor to protect the farmer from economic injustice. Among other matters Mr. Campbell expressed the profound hope that there would be no more milk commissions, the net result of which to date seemed, in his opinion, to have been unfortunate.

Next on the program was Mr. N. P. Hull, president of the National Dairy Union, who reviewed the purposes of the association of which he is president, bringing out the point that in his belief there was at the present time considerable profiteering in oleomargarine. Mr. Hull was of the opinion that a federal investigation of the cost of manufacture of oleomargarine would be a good thing for the dairy interests, adding that by such means it might be possible to bring the price of oleomargarine down to about 18 cents a pound, action which would, in his opinion, kill it because of the fact that the American people did not care for cheap products of any sort. Before closing, he made some references to what he termed the deceptive uses of Food Administration promulgations in advertising butter substitutes.

Then came Mr. George L. McKay, secretary of the American Association of Creamery Butter Manufacturers' Association, who claimed that the dairymen were relatively in the same position as the ostrich breeder of New Mexico who now can obtain but \$5 for an ostrich, whereas before the advent of substitutes for ostrich plumes he obtained \$125. Mr. McKay dwelt upon the ancient lineage of butter as a food and step by step brought the situation up to date, mentioning the recent work of Mendel and Osborne, Hulbertson, Hopkins and Dr. McCollum. Mr. McKay quoted the recent magazine article of Dr. Harvey W. Wiley

in regard to the use of nut margarine and claimed that Dr. Wiley was the leading dietetical expert in the country at the present moment. The speaker also urged an advertising campaign which should be of the "straight from the shoulder" type, one which should point out all of the particulars in which butter substitutes fell short of equaling butter.

The next speaker was Mr. J. J. Farrell, president of National Association of Creamery Butter Manufacturers, whose remarks were largely critical. He criticised the intense individualism of past effort on the part of the dairymen, claiming that there had been too much oratory and too many leaders with too little real action as a net result. He criticised the dairymen for allowing state officials and dietetic advisers to recommend the use of butter substitutes, including among his criticisms several of the promulgations by the U. S. Food Administration which had, in his opinion, resulted in lowering the price of butter at least 10 cents a pound. Mr. Farrell also was extremely critical of the present system of public school education and of the conduct of various federal departments and bureaus. The dairy press as a whole came in for condemnation because of the willingness on the part of some of the dairy papers to criticise unwholesome butter. Mr. Farrell ended with an appeal to "educate Washington." As the gentleman is a candidate for Congress, hoping to represent the third district of Minnesota, there is a possibility that he will have the opportunity to remedy matters before long.

Next appeared Mr. John LeFeber, president of the International Milk Dealers' Association, who urged reasonable recompense to farmers for milk and also that some effort be made to increase the consumption of milk. He stated that his Association was working on $3\frac{1}{3}$ per cent profit on turnover. He approved of the work of Mr. Hoover and hoped that before long the Food Administration would standardize milk as the cheapest single food on the market, ending his address with the suggestion that the members so conduct themselves as to be considered patriots rather than martyrs.

Mr. T. H. McInerney, president of the Hydrox Company, was the next speaker and brought out the fact that the milk industry was not as well represented as it should be in the business councils of the nation as witnessed by the fact that the recent convention of the National Chamber of Commerce gave no attention whatever to this highly important matter. He claimed that certain milk products are not given the recognition of which he considered them worthy, mentioning the case of ice cream in England, which is already on the non-essential list. Mr. McInerney urged that whatever action was taken by the present meeting their activities should include all elements of the dairy industry, not forgetting ice cream.

Secretary Skinner next called attention to the fact that while the cheese industry was not represented by delegates, he had received letters from prominent cheese dealers expressing an interest in the meeting and stating that the trade in cheese at present was at a standstill, the best offers being somewhere around 18 cents.

Mr. M. D. Munn, president of the National Dairy Council, followed and pointed out that the present condition in which the dairymen found themselves was largely due to their own sins of omission. He dwelt upon the food value of milk, upon the large part milk products play in the national dietary constituting from

18 to 20 per cent of the total, and paid his respects to butter substitutes in no uncertain fashion. Mr. Munn criticised the Food Administration for its mistakes along dietetic lines and suggested that its members should be so educated that they would not again state that "other fats are equally good for cooking." Certain advertisements of nut margarine were exhibited by the speaker and the salient statements therein characterized as "damnable lies." In oratorical manner Mr. Munn likened the dairy industry to the army which defended Paris, the commander of which being credited with the statement, "My right is defeated, my left is routed, my center has been overcome; I am going to charge." This speaker sounded the purpose of the meeting in the form of three suggestions: (1) to request the Food Administration to announce the plentifulness of dairy products and to urge their freer consumption; (2) to plan to meet legislative action in regard to butter substitutes; (3) to raise a fund of considerable size for an educational campaign.

A prominent speaker of the afternoon session was H. L. Russell, late dean of the Agricultural College of the University of Wisconsin and at present with the Food Administration. While Dean Russell in the main corroborated many of the significant remarks of the forenoon, he differed from his predecessors in pointing out the fact that there was not enough animal fat in the world to-day to supply the demand therefor and that margarine of one sort or another was being consumed in every European country and that the dairymen might well bear that fact in mind in their plans for the future. He stated that the United States Food Administration would soon take such action as would probably bring about a freer use of milk products. Among other matters of detail he mentioned the fact that cheese selling at wholesale at 18 cents was selling at retail at about 35 cents and that until this wide spread was narrowed, the Food Administration would not feel at liberty to take any steps to further the sale of this valuable food product. In connection with the recent request for the lowering of the fat content in ice cream from 14 per cent to 8 per cent he said that in view of the plentifulness of dairy products he saw no reason for letting down the bars and doubted if action along that line would be taken. He promised the condensed milk men that they would have all the sugar they needed, and that the ice cream industry, which at present is regarded in somewhat the same light as that of soft drinks, would be differentiated to the extent of being regarded as "semi-nonessential." The plans for sugar distribution at present include providing plentiful supplies for the household, and for the preserving trade, ice cream, chewing gum and soft drinks following in the order named. Dean Russell brought out the point that corn syrup and certain other materials could be used as substitutes for cane sugar in many lines, but realized that because of the retail demand of these substitute products, it was not easy for the wholesale trade to obtain them.

George E. Haskell, late of the Food Administration, addressed the meeting on the one point of the complexity of the situation and the need for charity in connection with all official action, claiming for himself the responsibility of certain mistakes in judgment which the dairymen had seen fit to criticise in connection with certain of the Hoover promulgations.

Other speakers included Mr. R. D. Cooper, president of the Dairymen's League of New York; Mrs.

Davis of the Dairy Division of the U. S. Department of Agriculture who served a luncheon the principle component of which was cottage cheese in various and sundry forms; Mr. J. W. Knobbe of the Ice Cream Association who deplored the use of substitute sugars in ice cream; Prof. E. L. Sammis, secretary of the Wisconsin Cheese Makers' Association; Mr. Horace G. Davis of Plymouth, Wis., a cheese maker; Prof. A. C. Anderson of the cheese making division of the University of Michigan; Mr. H. N. Woolman, a milk distributor of Philadelphia; B. H. Rawl of the Dairy Division of the U. S. Department of Agriculture; Mr. W. H. Phipps of the Kansas City Health Department.

Saturday evening, Dr. E. V. McCollum addressed the meeting on the subject of "Protective Foods." His address was practically the same as that delivered at the meeting of the Chicago Division of the American Chemical Society, mentioned elsewhere in this issue.

The committee in charge of the activities of the dairymen consists of:

D. D. Aitkin.

Milo D. Campbell.

John L. Le Feber of Milwaukee, Wis.

Among the 150 or more present were, in addition to the speakers, the following:

(Education and Official): John B. Newman, superintendent of Foods and Dairies of the Illinois Division of Foods and Dairies; Prof. H. A. Harding of the University of Illinois; Prof. H. H. Kildee of the University of Minnesota; R. E. Caldwell of the University of Indiana; J. H. Frandsen of the University of Nebraska; James Sorenson, dairy and food commissioner of Minnesota; W. B. Barney, dairy and food commissioner of Iowa; C. A. Lee, assistant dairy and food commissioner of Wisconsin; Eugene Davenport of the University of Illinois; W. H. Grell, of the U. S. Bureau of Markets, Chicago office; E. V. Ellington of the U. S. Department of Agriculture; (Producers) C. H. Potter, president of the Illinois Milk Producers' Association, Elgin; R. N. Gow, secretary of the American Jersey Cattle Club, New York; James G. Watson, Ayreshire Extension representative, Brandon, Vermont; H. W. Ingersoll, Elyria, Ohio, president of the Ohio Milk Producers' Association; Fred Pabst, Oconomowoc, Wisconsin; G. Watson French, vice-president of the Holstein-Friesian Breeders' Association; P. B. Weissinger, Shelbyville, Kentucky, representing the Kentucky Milk Producers' Co-operative Association; (Milk Dealers) S. O. Dungan, president of the Polk Sanitary Dairy Company, Indianapolis; Chas. H. Hood of H. P. Hood and Sons, Boston; F. A. Wills, of Supplee, Wills-Jones Milk Company, Philadelphia; Dr. D. B. Peck of the Bowman Dairy Company of Chicago; F. H. Webb of Borden's Milk Company, Chicago; (Butter) J. A. Walker, vice-president of the Blue Valley Creamery Company; H. S. Johnson, president of the Fox River Butter Company; W. J. Kennedy of the Towars Creamery of Detroit; (Cheese) C. E. Blodgett of Marshfield, Wisconsin; (Ice Cream) John T. Cunningham of Chicago.

Oil From Rubber Seed.

In the world-wide search for vegetable fats, new materials are being utilized. Seeds from the rubber trees on the East Indian plantations have heretofore been wasted. An experimental shipment of these seeds was recently crushed in England and yielded oil useful for various purposes, and also fodder for cattle. Mills for crushing are to be erected in the East Indies

RETAIL PRICE

Average Price per Pound	Average Price per 100 Calories		Lima, Ohio (Typical)	Augusta, Me.	Concord, N. H.	New York, N. Y.	Trenton, N. J.	Philadelphia, Pa.	Richmond, Va.	Montgomery, Ala.	Lexington, Ky.	Wheeling, W. Va.	Pittsburgh, Pa.	Buffalo, N. Y.	Cleveland, Ohio
CEREAL PRODUCTS															
6.4	.40	Wheat Flour, War Std., 49 lb. bag	330	300	350	340	350	375	330	340	340	310	350	320	320
7.7	.48	Rye Flour, Std., 24½ lb. bag	195	196	175	170	220	225	184	220	175	170	245	186	186
7.4	.45	Graham Flour, 10 lb. bag	70	70	75	70	90	85	76	85	76	65	100	80	80
10.9	.67	Corn Starch, lb.	12½	10	12	9	12	12	12½	10	.....	8	10	10	10
8.3	.52	Corn Flour, 5 lb. bag	40	33	40	40	37½	50	45	.....	42	42	40	50	50
7.0	.43	Corn Meal, lb.	7	7	8	7	7	8	6	6	6½	7	6	7½	7½
8.8	.53	Barley Flour, lb.	11	7½	10	8	7½	9	8	.....	.....	8½	8	8	8
9.0	.50	Oat Meal, lb.	12	8	9	7	7½	9	10	12½	8	8½	11	9	9
8.7	.48	Oats, Rolled, Bulk, lb.	10	8	9	7	7½	9	10	.....	7½	8	8	.....	.....
12.5	.76	Rice Flour, lb.	15	17	15	10	14	15	14	.....	15	12½	15	.....	.....
11.1	.70	Buckwheat Flour, lb.	10	13	12	9	10	11	11	12	10	10	10	10	10
9.9	.61	Hominy Grits, lb.	11	.....	10	8	8½	10	8	10	10	10	10	10	10
10.0	.55	Armour's Oats, 1 lb. 4 oz.	12	13	.....	15	.....	12	12	12	13	12	13	10	10
10.8	.60	Purity Oats, 1 lb.	.....	10	12	.....	10	12	12	10	13	10	11	10	10
9.9	.55	Quaker Oats, 1 lb. 4 oz.	12	13	12	10	11	14	12	15	13	12	12	10	10
11.9	.75	Rice, Fancy, Head, lb.	13	10	13	10	13	14	14	10	13	13	9	12	12
11.6	.72	Barley, Pearled, lb.	15	12	15	8	8½	9	12	17	.....	8½	8	20	20
9.6	.81	Bread, lb.	10	9	9	10	8	8	10	10	10	10	10	10	10
21.2	1.12	Crackers, Graham, lb.	22	20	25	18	22	22	25	14	30	22	20	25	25
21.2	1.10	Crackers, Oatmeal, lb.	20	.....	25	20	20	.....	25	14	20	22	.....	25	25
13.4	.82	Macaroni, lb.	15	20	15	14	14	18	15	10	15	14	9	10	10
SUGAR, SYRUP AND MISC.															
9.1	.50	Granulated Sugar, lb.	9	9	9	8	8½	8½	9½	8½	9	9	9	10	10
8.4	.58	Corn Syrup, 10 lb. pail	90	75	.....	100	85	.....	85	80	85	75	.....	100	85
28.1	1.90	Comb Honey, lb.	28	.....	40	32	.....	35	33	.....	25	25	25	30	30
29.7	1.32	Cocoa, Bulk, lb.	30	25	30	20	40	30	.....	50	.....	30	25	24	30
26.7	4.45	Eggs, fresh gathered, firsts, doz.	37	45	50	50	46	45	39	40	38	40	42	40	40
5.9	1.90	Milk, qt.	13	11	12	12	13	14	15	.....	13	.....	15	13	14
33.9	1.63	Cheese, American Cheddar, lb.	38	31	35	35	35	35	33	35	40	35	38	35	28
FATS															
51.2	2.16	Bacon, Sliced, lb.	60	38	50	45	45	45	45	60	40	48	45	55	44
51.4	1.47	Creamery Butter, Fancy, lb.	50	52	55	47	54	55	59	60	55	54	52	50	49
32.5	.79	Pure Leaf Lard, lb.	35	30	35	34	33	30	33	35	35	33	28½	.....	31
37.6	1.10	Oleomargarine, Uncolored, lb.	35	35	35	32	36	34	35	35	35	38	32	31	28
34.4	.98	Nut Margarine, Uncolored, lb.	35	33	35	32	35	35	35	41	35	32	32	31	30
73.3	1.83	Italian or Spanish Olive Oil, qt.	175	150	150	140	115	140	140	145	175	130	110	130	125
32.7	.82	Cottonseed Oil, qt.	75	90	.....	50	107	.....	39	65	75	.....	50	65	50
36.5	.91	Corn Oil, qt.	70	80	.....	70	80	.....	.....	55	75	65	70	.....	60
38.7	.97	Peanut Oil, qt.	.....	.....	.....	70	.....	.....	.....	.....	.....	.....	.....	.....	100
29.4	1.07	Peanut Butter, lb.	30	24	30	30	22	23	30	45	30	30	23	35	49
FRUITS AND VEGETABLES															
18.9	1.43	Evaporated Apples, lb.	25	.....	30	20	25	.....	19	10	15	20	25	.....	.....
17.0	1.42	Evaporated Peaches, lb.	20	15	30	18	15	20	15	15	15	17	20	.....	15
13.2	6.29	Canned Peaches, No. 2½, Std., 29 oz.	25	17	30	20	23	28	20	20	20	20	22	30	25
14.1	2.01	Canned Pineapples, No. 2½, Std., 30 oz.	30	23	30	28	30	30	27	20	30	28	30	30	25
15.3	.98	Raisins, Seeded, per pkg., 15 oz.	15	13	15	14	14	16	15	15	15	12½	16	15	13
15.7	1.35	Prunes, Medium Size, lb.	20	13	15	15	15	18	12½	15	18	14	18	20	13
2.1	.70	White Potatoes, lb.	2½	2	3	5	2	2	2	3	3	2	2	2½	3
6.8	1.51	Sweet Potatoes, lb.	10	8	10	9½	7	6	1½	2½	7	.....	4	8	8
3.2	1.60	Onions, lb.	5	4	3	3	2	2	5	5	4	1½	3	2	3
17.2	1.10	Navy Beans, dry, lb.	20	15	.....	18	18	18	17	20	19	18	18	20	18
14.0	15.56	String Beans, Cnd., No. 2, Std., 19 oz.	20	17	20	13	20	16	17	15	15	15	15	20	15
12.9	2.93	Corn, Canned, No. 2, Std., 20 oz.	12½	17	22	18	18	20	16	20	20	15	15	20	20
12.5	5.00	Peas, Canned, No. 2, Std., 20 oz.	18	17	20	14	18	20	15	20	13	14	15	20	18
15.3	.95	Split Peas, lb.	.....	15	15	13	14	23	15	15	15	16	15	17	15
22.5	1.21	Peanuts, unshelled, lb.	.....	7	.....	17	22	.....	.....	.....	30	.....	20	25	.....
8.9	8.90	Tomatoes, Cnd., No. 3, Std., 33 oz.	15	17	25	20	20	23	19	20	15	20	22½	25	22
5.4	4.50	Cabbage, lb.	7	4	8	6	5	3	5	6	4	3	2	5	5
4.2	2.47	Beets, lb.	5	4	8	.....	.....	3	.....	.....	5	.....	4	5	5
3.9	2.17	Turnips, lb.	.....	3	8	4	.....	3	.....	4	3	.....	4	5	8
MEATS AND FISH															
30.5	4.69	Beef, Round Steak, lb.	32	30	40	35	38	33	35	30	33	.....	30	28	28
34.9	6.98	Veal Cutlets, lb.	35	28	.....	45	45	40	40	40	35	.....	38	27½	32
31.4	3.61	Leg of Mutton, lb.	30	34	32	30	.....	30	38	40	32	.....	35	26½	.....
35.2	4.19	Leg of Lamb, lb.	40	35	32	33½	32	34	38	40	35	.....	38	32	35
33.5	2.72	Pork Chops, lb.	35	30	32	40	35	34	35	35	35	33	35	36	32
46.1	2.43	Ham, Sliced, medium fat, lb.	50	38	40	50	45	47	40	45	40	45	50	45	40
44.2	15.24	Chickens, Broilers, lb.	45	.....	40	43½	45	35	.....	.....	60	.....	40	45	.....
24.2	6.72	Salt Cod, lb.	25	18	27	30	22	25	17	35	20	.....	15	24	20
25.6	2.56	Salt Mackerel, lb.	25	17	.....	27½	28	28	25	.....	25	23	20	32½	25
32.2	7.16	Halibut, lb.	35	30	.....	30	45	40	.....	.....	38	.....	30	30	30
31.5	4.92	Salmon, fresh, lb.	32	25	.....	25	.....	55	.....	.....	25	.....	25	30	22
28.2	4.27	Salmon, canned, No. 1, tall, 1 lb.	30	25	30	25	25	25	30	20	30	28	30	35	30

APRIL 1, 1918

Indianapolis, Ind.	Louisville, Ky.	Memphis, Tenn.	Nashville, Tenn.	New Orleans, La.	Little Rock, Ark.	Chicago, Ill.	Madison, Wis.	St. Paul, Minn.	Fargo, N. D.	Siuux Falls, S. D.	Topeka, Kans.	Oklahoma City, Okla.	Tucson, Ariz.	Salt Lake City, Utah	Reno, Nev.	Boise, Idaho	Seattle, Wash.	Portland, Ore.	Los Angeles, Cal.	San Fran- cisco, Cal.
343	325	318	320	223	340	295	290	290	290	305	285	275	380	275	275	285	275	265	295	295
175	175	220	158	175	175	190	184	180	195	225	220	195	190	165	210	175	150	170	163	155
75	75	80	70	70	85	70	70	65	90	75	60	70	70	65	80	70	65	60	62	75
14	12	7½	7½	6	15	12	10	11	12½	12	10	10	10	12½	12½	10	10	9	11	15
38	6½	5½	5	35	42	45	50	35	40	45	35	50	5½	42½	50	40	40	35	45	40
7	7½	.....	.....	15	6½	7	7½	7	7½	7½	7	5½	8½	7½	8½	8	7	7	8	7½
10	8	.....	.....	7	.....	8	9	7	9	9	.....	10	8	9	10	8	8½	8	9	7½
10	8	10	.....	7	9	.....	8	8	9	8	.....	8½	.....	10	10	.....	8	9½	9½	11
10	8	.....	7	11	10	8	9	8	9	8	9	8½	12½	10	10	8	8½	8	10	8½
.....	11	.....	.....	10	.....	13	10	.....	.....	15	.....	12½	10	.....	10	12	12	10	11	10
12	11	10	15	10	10	10	10	.....	9½	10	.....	11	25	10	11½	10	9	.....	.....	11
15	7½	6½	7	6	7	8	10	10	10	.....	11	9	12½	25	9	15	9	8	9	10
.....	12	.....	10	11	12	12	12	12	15	.....	.....	.....	12½	15	.....	.....	15	.....	.....	.....
10	8	9	8½	11	10	10	12	12	9	9	10	.....	12½	15	.....	10	12½	.....	10	.....
12	12	10	10	11	12	12	12	12	15	.....	.....	12½	12½	15	14	15	12½	12½	13	15
13	12½	9	10	10	12½	13	13	12½	12½	13½	12½	10	12½	12½	12	12	10	11	12	12½
10	8	9	12	10	.....	12	12½	10	10	10	.....	10	12½	12½	14	12	11	12½	12	15
10	10	9	10	9	10	9	10	9	10	10	10	10	10	10	10	10	10	10	9	8½
22	.....	.....	20	25	.....	22	20	22	18	22	20	20	12½	21	15	25	25	18	19	25
22	.....	.....	20	20	25	22	20	22	18	22	20	20	12½	21	15	25	25	28	19	25
15	12½	13	10	10	12½	15	.....	12½	14	15	18	12½	10	20	12½	11	10	12	14	10
9½	9	8½	8½	9	9½	9	9	10	9	10	10	9	8½	10	9	10	8½	8½	9	9
75	.....	63	65	90	70	78	90	75	90	95	85	75	75	90	85	90	95	95	90	100
25	35	.....	35	.....	25	28	25	25	30	25	25	25	35	20	20	20	.....	25	.....	25
35	30	28	30	.....	.....	25	28	25	35	50	25	27	.....	25	45	.....	25	25	20	25
38	40	36	35	37	40	43	38	38	35	33	35	35	50	40	38	35	45	38	40	40
11	10	.....	10	15	20	13	11	10	13	10	9	15	15	10	10	.....	.....	13	15	12
43	40	.....	30	35	35	35	35	33	35	35	40	40	35	35	30	35	30	30	35	27½
48	55	50	47½	50	55	48	58	50	50	55	55	50	60	55	60	50	50	50	62	65
45	50	48½	50	51	57½	49	48	46	48	47	45	47	60	50	50	55	55	53½	50	50
32	34	31	32	32	35	32	35	33	32	32	34	35	.....	33⅓	35	30	30	30	30	32½
35	35	29	34	30	37	35	34	33½	35	35	32	33	40	35	40	40	38	40	36	35
33	35	30	34	36	.....	35	32	33	35	35	35	33	.....	40	.....	40	.....	35	.....	35
115	160	117	165	120	.....	150	125	125	140	150	140	150	190	175	135	150	125	.....	115	125
.....	60	45	65	40	.....	70	85	55	.....	65	40	43	100	95	53	45	65	.....	60	45
69	65	60	.....	75	75	76	75	65	65	65	.....	73	75	80	78	75	65	.....	64	75
.....	65	.....	.....	.....	.....	.....	75	.....	.....	.....	.....	.....	.....	.....	.....	60	.....	.....	.....	.....
35	35	34	25	25	25	25	28	22	40	30	25	30	35	35	25	35	22	20	25	23
.....	.....	16½	15	20	17½	.....	.....	20	18	.....	15	15	20	20	17	17½	18	15	18	20
18	15	13	12½	20	15	18	20	18	20	18	15	15	20	17½	17	15	15	12½	16	15
25	25	26	23	25	25	30	25	25	25	20	22	24	25	30	25	25	25	20	20	25
35	25	21	27	15	35	25	25	30	30	28	30	27	25	25	25	25	15	25	24	25
17	15	12	12	15	15	15	14	15	15	15	15	15	15	15	14	15	12½	12½	12	12½
19	18	14	12½	15	16	18	20	15	18	18	14	13	15	17½	12	17½	10	12½	19	15
1⅓	2⅓	1¾	2	2½	2	1½	1½	1¾	1½	2	2	1¼	2¼	1	1	1	1	1¼	2	2½
7½	5	5	3	2½	3½	.....	10	10	.....	10	7	7	7½	.....	10	.....	.....	.....	5	8
2½	5	2½	5	5	4	4	4	2½	3	4	5	2	4	2	2½	2	3	2½	1	3
20	18	15½	15	15	18	19	17	17½	18	18	17½	16	15	15	16	17½	17	13	18	15
23	15	20	13	15	17½	18	20	15	15	20	18	14	12½	15	14	20	15	15	15	15
15	15	11	14	12½	20	15	18	15	15	15	17	16	12½	15	14	20	15	12½	13	15
12½	15	15	14	10	17½	16	18	12½	15	15	18	15	15	12½	14	20	15	12½	13	15
23	15	.....	15	15	.....	15	12½	18	15	.....	20	15	12½	15	14	.....	10	12½	13	15
25	25	17	20	.....	.....	25	.....	25	30	22	.....	.....	.....	30	25	20	25	20	25	20
21	17	16	14	15	20	23	18	18	20	20	20	20	12½	15	18	17	12	12½	16	15
4½	9	5	3	9	6	5	7	5	6	7	5	6	7½	6	4½	8	5	7½	4	2
.....	7½	.....	.....	3	6	4	3	4	.....	.....	.....	.....	5	2	2	8	2½	2½	.....	1
.....	7½	.....	.....	2	4	4	4	2½	4	5	2½	3	5	2	2	8	3	2	.....	1
30	27½	27½	30	33	30	30	26	30	32	30	30	30	33	25	30	.....	28	24	27½	30
.....	37½	30	30	40	.....	35	30	33	30	30	38	30	40	.....	40	.....	27½	23	40	35
.....	25	30	30	35	40	28	30	33	35	30	28	30	35	25	28	.....	30	30	.....	35
.....	35	35	35	35	40	35	32	35	35	35	38	35	40	30	32	.....	35	32	35	37½
30	32½	30	35	37	30	35	30	30	30	35	28	28	40	35	35	.....	38	32	35	35
45	45	.....	40	45	45	45	45	45	50	40	50	38	50	50	50	.....	45	50	57½	65
.....	50	40	.....	40	40	40	.....	37	32	.....	50	45	.....	.....	40	.....	.....	50	65	50
20	35	25	.....	20	35	30	30	18	18	32½	25	30	30	20	.....	15	.....	20	22½	25
25	32½	30	10	15	35	25	30	20	30	30	50	25	12½	.....	.....	25	12½	20	30	35
30	40	25	.....	60	35	35	28	30	30	30	25	.....	30	30	35	.....	22½	25	22	32½
30	50	25	.....	60	35	30	28	30	40	30	.....	25	.....	30	35	.....	20	30	30	32½
30	20	31	17	30	35	30	25	28	35	32	30	29	30	20	30	35	28	25	26	30

Commission Appointed to Consider the Meat Situation

THE President has approved Mr. Hoover's recommendation for the appointment of a commission to consider the whole war policy with regard to animal production and the meat packing industry, this commission to be formed from the Department of Agriculture, the Federal Trade Commission, the Tariff Commission, the Department of Labor, and the Food Administration.

Mr. Hoover's letter to the President, setting out the situation, is as follows:

26 March, 1918.

Dear Mr. President:

I feel that we have reached a position with regard to the whole meat industry of the country that requires a reconsideration of policy. The situation is one of the most complex with which the Government has to deal, by virtue of the increasing influence that the government purchasing has upon prices, by the necessity of providing for increasing supplies for the Allies, and the consequent reduction of civilian consumption and, with all, the due protection of the producer and the civilian consumer. This change of policy may take the form of more definite and systematic direction of the larger packers as to the course that they are to pursue from month to month, or may even take the form of operation of the packing house establishments by the Government.

The general economic forces bearing on the situation appear to me to be:

Purchases of the Allies and Our Government Must Be Co-ordinated.

1. The Allied purchases for both civilian and military purposes in meats, as in many other commodities, have been consolidated by necessity of shipping conditions and by necessity of the Treasury arrangement for advances to the Allies until private trading has been of necessity eliminated.

It is also becoming necessary for the Government to co-ordinate these purchases with those of our Army and Navy in order to prevent conflict in the execution of orders. This great consolidation of buying has to some extent, and will increasingly, dominate prices. We have, since last September, recognized that the export purchases of pork products would affect prices and after consultation with important committees of swine growers we last autumn gave a rough assurance to the swine producer of a minimum price which we felt that we could maintain from the export buying and this has been maintained although with considerable difficulties, and has been beneficial in stimulating production. The indications are that these purchases will now be further increased. The beef purchases have not up to the present time, been sufficient in volume to more than temporarily affect price, but the present indications are that for some time in the future they will be greatly increased and to a point where they may affect prices materially.

Increased Exports Must Be Made Possible by Reduced Civilian Consumption.

2. The increased quantities required for export must be obtained by either increased production or by reduction in civilian consumption—probably both.

The reduction in civilian consumption can be ob-

tained much the most equitably by voluntary reduction by the consumer and by moderate restraints such as meatless days, et cetera, and while it may be contended by some that a reduction in consumption may be obtained by increase in price, such conservation is obtained by the elimination of that section of the community with the least purchasing power. In other words, conservation by price becomes conservation for the rich and not for the poor; whereas an extension of the conservation policy now in force places reduction in consumption where it rightly belongs—on those who can save from plenty, not upon those who save from nourishment. It appears to me also of the utmost national importance that we shall maintain through the country a complete sense in voluntary reduction in the consumption of all commodities if we are to provide the necessary surpluses either in money, manpower or material, necessary to winning the war. On the other hand, the adjustment of conservation measures of this type and the surplus required from time to time is extremely difficult without these measures themselves affecting price and developing discontent and criticism in sections of the producing community. I recognize fully the well-founded objection to any theory of price-fixing, but where the purchases of war necessities in a given commodity have reached such a volume that the purchase of these commodities trench into the domestic consumption, the operation of this purchasing power becomes a condition of price-fixing and, to my mind, all theories go by the board.

The Three Alternatives in Government Control of Meats.

3. The Government is thus faced with three alternatives in the matter of control of meats:

a. To free the Government from all interest in price by abandoning direction of war purchases and to abandon conservation measures because these may also affect price.

This would be a relief to the Government but with growing volume of purchases the price influence will be transferred to uncontrolled agencies who are themselves price-fixing and carries the following dangers: It will stimulate profiteering and speculation. Prices in the season of the year of large production can be manipulated downward and in the sparse season will ascend to the point where some classes will be eliminated from consumption. The cost of living thus subjected to abnormal fluctuation will reflect in wage discontent and instability. It will destroy systematic saving of the commodity by individuals and this saving in consumption is a vital national policy. The producer will go through erratic periods of discouragement and of stimulation which must undermine any systematic policy of national or individual increase in production, for every period of discouragement cuts off production of animals, which cannot be recovered.

b. To continue as at present the direction of these large purchases with a mixture of partial national policy in production and day to day dealing with emergency.

This is an almost intolerable situation for any government official in criticism from both producer and consumer, and with the growing volume of purchases

this criticism must increase. It permits of no constructive policy in production.

c. To stabilize prices based upon cost of production at a fair and stimulative profit to the producer and with stabilization to eliminate speculative risks and wasteful practices and thus some gains for the consumer.

If such a policy is adopted it also follows that it will have a most important bearing on and relation to policies of agricultural production and a long view can be taken and supported in assuring the producer of fair returns. This course is also fraught with dangers. It leads either to a voluntary agreement with the packers as to prices to be paid producers and charged to consumers from time to time, or to actual operation of the packing plants by the Government. In either case the Government will need to take some financial responsibility in speculative business. In such situation the Government will be under constant pressure from the producers for enhancement of price and from the consumer for reductions. It necessitates the constant action of a commission to determine such prices. It will mean that all the complaints of trade fall upon the Government. The choice of alternatives is one of determination of the maximum contribution to winning the war and the choice of the lesser economic evil between such alternatives.

How the Government Can Legally Control Industries.

4. The legal ability of the Government to give authority to such measures lies in the power to direct contracts for war necessities, to take over and operate plants and to make voluntary agreements to carry out a definite and constructive policy. When purchases are so large as to cut into civilian consumption, it becomes possible to insure manufacturers a complete market, thus eliminating their risk and thereby eliminating some of the margin that they must take in the conduct of a speculative business and it also gives sound reason for directing their policies.

Control of Some Commodities Has Already Been Necessary; Meat Is Next.

5. For these very reasons it has been necessary to set up partial or complete arrangements of this character in iron, steel, copper, explosives, wheat, sugar and some other commodities. None of these arrangements have evolved out of any governmental policy of price-fixing, or any desire to interfere with the operation of natural trade laws, but are simply the result of the Government being forced into the issue of becoming the dominant purchaser and thereby, willingly or unwillingly, the price determiner in particular commodities.

We have been struggling as intelligently as possible with the situation in the meat industries with entire inadequacy of definite national policy. Our purchases hitherto have been sufficient to influence the market at times and in the case of pork products have been sufficient to preserve a minimum price. We have been, however, powerless hitherto to properly protect all branches of the cattle industry with its constantly changing economic situation, or to give intelligent direction or assistance to cattle production. As you know, I have never felt that when we arrived at a point to determine the broad policy with respect to a commodity this should be determined at the opinion of any single individual, no matter how sincere and earnest the application of intelligence might be.

I would therefore like to recommend to you to ex-

tend the policy which you have already initiated in the matter of many commodities, by early appointment of a board to study the entire situation with regard to the meat industry and the steps that should be taken with regard thereto. I would suggest that, following the precedent that you have already established, a committee should be set up embracing either the following gentlemen or their delegates directly responsible to them:

The Secretary of Agriculture as representing the producer.

The Chairman of the Federal Trade Commission as representing trade conditions.

The Chairman of the Federal Tariff Board as representing economic thought.

The Secretary of Labor as representing the civilian consumer.

The Food Administrator as having to carry out any given policy determined upon.

This commission should at once exhaustively consider the entire situation in all of its aspects and determine a positive national policy in meats.

I apologize for writing at such length but the subject permits of little brevity.

Your obedient servant,

(Signed) HERBERT HOOVER.

His Excellency, The President of the United States, Washington, D. C.

The personnel of the Meat Commission is as follows:

For the Department of Labor: John A. Moffett, commissioner of conciliation; W. E. Hall, director United States Public Service Reserve; Ethelbert Stewart, chief statistician; Royal Meeker, commissioner of labor statistics.

For the Federal Trade Commission: Victor Murdock, member of the commission; Samuel Wesley Tator, temporary examiner.

For the Tariff Commission: Thomas Walker Page, vice chairman.

For the U. S. Department of Agriculture: George M. Rommel, chief, Bureau of Animal Industry; L. D. Hall, specialist in marketing live stock and meats, Bureau of Markets; former Governor Henry C. Stuart, of Elk Garden, Va.; and Marion Sansom, Fort Worth, Tex. The last two gentlemen are members of the joint Agricultural Advisory Committee appointed by the Department of Agriculture and the United States Food Administration.

For the U. S. Food Administration: Joseph P. Cotton, chief of Meat Division; C. E. Yancey and J. W. Sullovan.

The commission will meet continually until its labors are completed.

U. S. Supreme Court Denies Price Maintenance Right.

Another patent decision of much interest in the question of price maintenance is the decree rendered by the United States Supreme Court on March 4, against the American Graphophone Company. The Boston Store of Chicago purchased goods from the Graphophone Company on a contract permitting resale at certain stipulated prices only, and then cut the price of the records and advertised the cut. The U. S. Supreme Court upheld the lower court's decision ruling that goods which have been sold outright are no longer in any way under the control of the seller.

National Dairy Conference.

A national dairy conference promoted by E. T. Meredith, publisher of *Successful Farming*, was held in Des Moines, Iowa, April 10 and 11.

The object or purpose of this conference was to develop ways and means to increase the nation's supply of dairy products. The economic value of dairying and its future were the chief topics covered by addresses and discussions. The conference was of a promotional nature and calculated to arouse the producers of the country to the importance of increasing and extending the dairy industry.

The conference was addressed by men of national reputation on dairy subjects. An invitation was extended to Dr. R. A. Pearson, second assistant secretary of agriculture, to attend the conference. Dr. Pearson is a national authority on dairying and he was to be present or be represented by one of the leading dairymen of the Department at Washington.

The conference was closely allied with food production and food conservation with the idea of backing up the Administration in the matter of food production to help win the war. The whole purpose of the meeting was to encourage greater production of dairy products and more efficiency in methods of production.

Among the lectures included in the preliminary program, indicating the nature and importance of the conference, were the following:

"Dairying Compared to Livestock Feeding on High Priced Farms," Prof. L. S. Gillette, assistant professor dairy husbandry, Ames, Ia.

"How Iowa and Other States Are Promoting Dairying," W. B. Barney, Iowa state dairy commissioner, Des Moines.

"The Problems of Milk Distribution," W. J. Kittle, secretary Milk Producers Association, Chicago.

"The Labor Problem in Dairying," Col. G. W. French of Davenport, Ia.

"Dairy Products, a Factor in Winning the War," Prof. Perry Holden, Chicago.

"The Feed Question in Dairy Farming," J. C. Fuide, dairy equipment, Chicago.

"Teaching Farmers the Difference Between Profitable and Unprofitable Cows," Hugh Van Pelt, editor *Kimball's Dairy Farmer*, Waterloo, Ia.

"The Modern Creamery," Professor Mortenson, professor of dairying, Iowa Agricultural College, Ames, Ia.

"The Trend of Inquiries on Dairy Subjects," L. P. Townsend, Des Moines, Ia.

Michigan Legislation.

The Michigan Legislature at its last session abolished the office of Dairy and Food Commissioner, to take effect April 1, 1918, creating the office of Food and Drug Commissioner. "All the powers and duties imposed by law upon the Dairy and Food Commissioner, at the time this Act takes effect, are hereby transferred to and vested in the Food and Drug Commissioner."

At the same session of the Legislature the Dairy and Food Commissioner was empowered to make rules and regulations governing the manufacture, handling and sale of food products within the state of Michigan. Previous to this session of the Legislature the Commissioner was not delegated with this authority.

Dairy, Food and Drug Officials Will Meet.

The Twenty-second Annual Convention of the Association of American Dairy, Food and Drug Officials which will be held in Chicago, August 27-30, promises to be one of the most important held by this organization. Many subjects of paramount importance in safeguarding the country's food supply will be discussed and considerable time will be devoted to the consideration of new problems arising from war-time conditions in relation to food subjects. The sessions will be held at the Congress Hotel.

Preliminary arrangements for the convention were taken up at a meeting of the Executive Committee in Chicago, March 22. It was agreed that no sessions will be held in the afternoon in order to afford opportunity for visiting food manufacturing, storage and dispensing establishments in Chicago and vicinity. Open sessions at which non-members and the public are invited will be held Tuesday and Thursday mornings and Wednesday and Thursday evenings. Executive sessions limited to membership will be held Wednesday and Friday mornings. The meeting Wednesday evening will be preceded by the Association dinner.

The program will include addresses and discussions relating to food nutrition and conservation, standards, law enforcement methods, army food supplies, the effect of the war on food industries, and many other food topics along scientific and technical lines.

Representatives from every state in the Union, as well as many prominent federal officials and experts on the subjects to be taken up, are expected to attend. The membership of the organization is composed of federal and state officers charged by law with the administration and enforcement of laws regulating the sale of dairy products, foods and drugs.

U. S. Food Leaflets.

Additional food leaflets issued by the Food Administration and the Department of Agriculture are:

U. S. Food Leaflet No. 11. Milk.

U. S. Food Leaflet No. 12. Save Fuel When You Cook.

U. S. Food Leaflet No. 13. Let the Fireless Cooker Help You Cook.

U. S. Food Leaflet No. 14. Dried Peas and Beans.

U. S. Food Leaflet No. 15. Save Sugar.

A separate leaflet on Victory Bread (Index No. E-17) has also been issued by the Food Administration. It gives recipes for potato yeast, corn meal yeast, and oat meal yeast breads, rice bread, barley bread, bean bread and bread crumb bread.

Virginia Bottle Law.

House Bill No. 56, reported from the Committee on General Laws, provides that any person engaged in manufacturing, bottling or selling soft drinks, etc., in bottles, etc., with his name or brand thereon, may file in the county where principal office of business is situated a description of the name or brand so used and cause such description to be published in a newspaper for three weeks, and he shall thereupon be deemed the proprietor of such name or brand and of every vessel upon which it may be branded. The bill also makes it unlawful for any person to use or sell any vessel so branded and registered, or to destroy the brand thereon without the written consent of the person owning the brand or mark.

Protective Foods

By THE EDITOR.

THE NEW dietetics is to be based upon *fat soluble A*, a necessary concomitant of physical well-being which is found in butter fat, egg-yolk, glandular tissue and the leaf of vegetables. A diet which lacks milk, eggs, chicken livers or spinach—or their equivalents—is demonstrably deficient; it will not support normal existence. The importance of the biological analysis, as contrasted with the chemical analysis, is emphasized in the new dietary philosophy; the protein ratio becomes a matter of minor importance, for although the tissue-building ability of protein is not challenged, no metabolism can take place without the aid of *fat soluble A*. The dietary problem of the future will concern itself with seeing to it that racial dietaries contain a sufficient quantity of this activating accessory—this “protective” food as Dr. E. V. McCollum terms it. In addition to *fat soluble A* there is need also of *water soluble B*—the substance which cures berri berri—but this particular protective food is found so abundantly in nature that its presence in the diet in sufficient amounts may be safely taken for granted.

All this and much more Dr. E. V. McCollum, late of the University of Wisconsin, but now with the Rockefeller Foundation stationed at Johns Hopkins, told the members of the Chicago Division of the American Chemical Society at the Chicago City Club on the evening of April 12, 1918.

Tracing the development of the science of nutrition from the early days of Atwater and his co-workers down through the comparatively recent studies of deficiency diseases with their accompanying announcements of the discovery of lipoids, vitamins, food hormones and so on, the speaker told in interesting fashion of his work at Wisconsin and of his final decision that instead of metabolism's being a complicated affair, it is in reality comparatively simple—but dependent utterly upon the presence in the diet of certain substances, at present unidentified.

As Dr. McCollum's work is that of an originator he is, by all the canons of scientific achievement, entitled to choose the names for the children of his brain. The name “lipoid” is out of the question as the substances are certainly not “fat-like” in their nature; neither are they “amines” and for that reason the name “vitamine” is objected to. For the present Dr. McCollum is content to allow the substances in question to go by the names of *A* and *B*, with the prefix of their solubility as a limiting adjective.

For many years, in the realm of animal husbandry, there has been scepticism as to the practicability of regarding as interchangeable diets which are chemically equivalent. As far back as 1906 Prof. Babcock of Wisconsin suggested as an appropriate subject of research a feeding experiment of diets having the same number of calories, the same proportion of protein and the same ratio of digestibility. Accordingly, a herd of 12 heifers was selected for the test, 4 being fed upon a wheat diet, 4 upon an oat diet and 4 upon a corn diet. The various diets were chemically equivalent, and physiologically equivalent according to the best thought of the day. The cattle under test were permitted to eat no other food.

Months went by with no apparent results of differentiation. At the time of calving, however, the effect

of the various diets was made manifest in striking fashion. The calves from the wheat-fed cows were born a month ahead of time, were about 25 pounds underweight and were—one and all—dead at birth. The calves from the oat-fed cows were born ahead of time, were full weight, but died within a week or so. The calves from the corn-fed cows were normal in every particular.

Here was a puzzle. By all the rules of nutrition, all of the calves should have come into the world under equally favorable circumstances. Prof. Hart of Wisconsin, who conducted the test, called Dr. McCollum into conference and from this enigma of cattle feeding dates Dr. McCollum's biological analysis of combinations of refined foodstuffs.



E. V. McCollum.

At that time Dr. McCollum was conversant with what had been done in formulating the new science of nutrition. Everything was based upon proximate analysis, due allowance was given for the protein ratio and, of course, all measurements were expressed in calories. Emil Fischer's study of the relative quality of proteins was well known and gave a possible clue for solving such a puzzle as the feeding experiment just described. Some work, but not a great deal, had been done on the deficiency diseases—berri berri, scurvy, pellagra and rickets. A few Scandinavian and British scientists had written suggestively regarding purified foodstuffs.

So, in 1908, Dr. McCollum decided to endeavor to solve the enigma of chemically equivalent but physi-

ologically non-equivalent diets. For his purpose he selected domestic rats, feeding them under carefully controlled conditions on combinations of various purified foodstuffs. Careful and frequent weighings were relied upon to determine growth.

By experimenting with purified starch, purified protein, milk sugar and fat, changing the form of fat used from time to time, it was soon seen that while the rats thrived on butter fat, egg yolk, and glandular tissue (or its expressed oil, as, for instance, codliver oil) they could not be made to grow on vegetable oils, lard, tallow or other carcass fats. By other experiments it was proven that butter fat had no effect upon berri-berri nor scurvy.

Other experiments went to show that cereals alone are not sufficient to support life—the rats died in 2 months on an all-wheat diet. All cereals are deficient in calcium, sodium and chlorine. All lack sufficient quantities of *fat soluble A*. A diet of mixed seeds is no better than a diet of the seeds entering into the mixture. But, a diet of seed, added salts and the leafy part of the plant supports normal existence.

When the efficacy of the leaf was realized, the philosophy underlying the entire series of experiments was manifest to the patient investigator. The leaf is a workshop or laboratory; the seed is a storehouse. The myriad-celled surface of a leaf, with its chlorophyll and protoplasm, is hourly bringing about transmutations of most wonderful sort; whereas the average seed is largely starch in a state of rest. If vitalistic adjuvants to the diet were to be found, the leaf should, logically, supply them. Thus, one of the protective foods—one of the foods which render usable the vast storehouse of food in general—is the leaf. Whether it be spinach or cabbage matters not; if it is edible it will serve the purpose. The only regret is

that there are none too many acceptable edible leaves.

The same logic may be applied to the other protective foods. Milk is a natural entire ration for the young. It would be strange if it failed to contain all necessary accessories. Glandular tissue, liver, sweetbreads, etc., are much more "alive" than is muscle-tissue. In the terms of the physicist, the new dietary may perhaps be most clearly appreciated by the contrasted use of the terms, static and dynamic. The dynamic force of the leaf renders available the static wealth of the seed.

The Italian peasant lives and thrives upon corn (*maize*) olive oil and a generous allowance of "greens." He gets his *fat soluble A* from the leafy element of his diet. The Japanese live upon fish, rice and eggs, the last named providing *fat soluble A*. The virile races of the earth are milk eaters and this dietary habit, according to Dr. McCollum, explains their virility, for butter fat is particularly rich in *fat soluble A*.

Dr. McCollum brought out the point that the dairy industry should not be allowed to suffer because of the present high cost of milk. Feed has advanced rapidly, as has the cost of farm labor, necessary sanitary restrictions have rendered obligatory the employment of high-grade and consequently expensive labor. Every other food has risen in cost from 5 to 500 per cent. The consumption of milk, however, seems to be delicately balanced as regards price. A cent or two more per quart cuts down the consumption in drastic fashion. Such should not be the case. Milk is one of a very few foods which are necessary—more necessary than is indicated by their cost per calorie, more necessary than is betokened by their protein content, necessary for the simple but all-sufficient reason that without them all other foods are of no avail. Such are Dr. McCollum's "protective foods."

Ice-Packed Poultry Committee of National Poultry, Butter and Egg Association Reports.

At a conference held in Washington, April 2, between representatives of the National Poultry, Butter and Egg Association and Dr. Alsberg, chief of the Bureau of Chemistry, the trade strongly opposed the suggested project to forbid interstate shipment of ice-packed poultry.

The report of Chairman Hatfield of the Ice-Packed Poultry Committee states that not a single instance of encouragement of the proposed action occurred. The chief arguments given by the poultry men were: that such a move would disrupt and disorganize this particular branch of the entire industry; that it would necessarily mean that many shippers in the country, dealers in the cities, wholesalers and jobbers would be forced to discontinue business, due to the fact that the shippers are not prepared for artificial refrigeration or pre-cooling plants; that in many cases even those who were financially able to equip such plants could not do so, since the demand would be too great all at once; that it would be impossible to get materials for the construction of the most moderate plant. The materials most particularly mentioned that would be hard to obtain were ammonia and cork board.

The dealers and jobbers in the cities presented the argument that even though the stock was pre-cooled and reached them as pre-cooled, it would mean heavier losses and a curtailment of trade if they could not use ice in shipping to their out-of-town trade, and that

it would be almost impossible for the trade to whom they sold to take care of it if they were not allowed to pack the poultry down in ice to hold during the period of distribution or use, as the case may be.

Chairman Hatfield reports that he was particularly impressed by a statement by Dr. Alsberg to the effect that absorption of water by ice-packed poultry started at the time the poultry was thrown into the first water from the picker and continued to a larger degree if this water was allowed to become warm and that this absorption of water and loss of food value was reduced by the use of ice cold or pre-cooled water as early as possible. Dr. Alsberg did not say that it was stopped entirely, but it could be very materially reduced.

It was suggested that the Bureau of Chemistry start an educational campaign in regard to the proper and efficient manner of handling ice-packed poultry, instead of disorganizing trade by stopping shipments. Mr. Hatfield urges the National Association to undertake such a campaign, believing that no definite action against shipping ice-packed poultry will be taken within the next year or two and that by that time the causes for objections to the practice could be removed.

Codfish and Salmon Firms Combined.

The Alaska Salmon Company has been combined with the Northern Fisheries Company. The combination will enable the one company to handle both the salmon and the cod pack.

New Jersey State Board of Fisheries.

House Bill No. 13, introduced in the New Jersey Legislature January 8, 1918, by Mr. Badgley, proposes to establish a State Board of Fisheries consisting of five members, citizens of the state who shall serve without compensation. These members to be appointed by the Governor with consent of the Senate, and are to have a head office in Trenton, N. J., meeting once a month in Trenton or other places as may be necessary. This Board is required to select with the approval of the Governor a director whose salary shall be fixed, not exceeding \$5,000 per year, and who shall devote his entire time to the duties of the office, serving for a term of five years and subject to removal from office by a majority of the Board. The Act contemplates appointment of assistants and other employes as may be necessary to conduct the business of the Board, none of these coming under civil service requirements except the bookkeepers, stenographers and clerks.

The Bill contemplates that the duty of the Board shall be to conserve the fish supply of the State and insure its distribution to citizens at equitable prices, the Board having power to license all kinds of fishing except for shell fish in all the waters within the three-mile limit, including Sandy Hook Bay and Raritan Bay. All licenses shall include a provision that on the action of the Board the fish caught by nets or otherwise must be sold to the State Board at a reasonable price to be fixed by it, and the Board has full authority to resell the fish wholesale or retail, or to store them for any length of time. All holders of licenses are required to make annual reports on the approximate value of each pound or purse net; also stating the number of men employed who are engaged in operating such pound or purse net, as the case may be, the number of pounds of fish caught and disposed of, the proceeds derived from the sale of the fish caught. The purpose of the act is to enforce equitable market prices for fish caught in local waters, and it seems well designed for carrying out this end. Various regulatory provisions stipulate the manner and position in which pounds and nets may be set up.

The Shipping Board Explains Import Embargo.

The United States Shipping Board authorizes the following statement:

Although the list of embargoes on overseas imports which was published by the War Trade Board is supposed to be the least important of the series people will be effected first and last in a hundred little ways. The primary purpose of the order is to save shipping space. About 1,500,000 long tons are cut off provisionally. Incidental to this saving is the barring, for the time being at least, of many familiar commodities. The embargo is not absolute in the case of most of the commodities, however. Provided they come by rail from Mexico and Canada or can be loaded in other countries without delay on ships about to return to the United States practically unlimited quantities may come in.

The Shipping Board uncovered some interesting situations during the investigations preliminary to the issuing of the list by the War-Trade Board. At a time when there was a serious food shortage in Italy ships were actually bringing to the United States the equivalent of 50,000 bushels of wheat which Italy had imported from the United States. The new embargo shuts off these imports absolutely.

The great "American" peanut, which comes here in quantities from Asia, also figures in the new embargo list. Peanuts imported in a year by the United States used up the equivalent of cargo space on a 5,000-ton vessel in continuous service in the peanut trade. The Shipping Board estimated that the same amount of shipping in the trans-Atlantic trade could carry more than 1,000,000 bushels of wheat to France in a year. The so-called "American" peanut is likely to be a less familiar article of diet from now on.

There was a similar situation in the case of currants from Greece. At a time when there was a cry of famine throughout the world Greece was sending to the United States the equivalent in food value of about 50,000 tons of wheat. It was impossible to justify trade of this kind during this stress of war and fewer cakes and buns will have currants hereafter.

In the case of raisins, the United States was sending 4,000 tons abroad every year and then bringing back 400 tons. This traffic also ceases as soon as the embargo takes effect.

A still more striking example was furnished by Argentina. Although the United States raises about 60 per cent of all the corn of the world, and Argentina raises no more than Illinois, the United States was actually importing large quantities of Argentina corn. Shipping Board experts have figured out that the amount of shipping tied up by this unnecessary traffic would suffice to transport about 2,000,000 bushels a year to the Army in France.

Turkey's debt to Germany was probably being paid in part by the United States, the Shipping Board found. The traffic constituted a constructive violation of the Trading-with-the-Enemy Act. In a single year Americans were paying for about 25,000,000 pounds of dates, mostly from Asiatic Turkey. Presumably, much of the money paid to the Turks in payment of these imports was paid in turn by the Turks to the German Government.

1,100,000 Tons of Food Shipped to Allies From the U. S. and Canada in March.

The Food Administration issues the following:

The total amount of foodstuffs shipped in the month of March from the United States and Canada to the Allies was about 1,100,000 tons, as against 750,000 tons for the month of February.

These materials include, from the United States: about 15,500,000 bushels of wheat and its products; about 16,200,000 bushels of other grains and their products; about 80,000,000 pounds of beef products; and about 200,000,000 pounds of pork products.

South Dakota Wholesale Grocers Urge Price Fixing.

A resolution urging that the price of corn, oats, rye and barley be fixed by the Government so that the price of wheat will show a premium was passed by the representatives of the South Dakota Wholesale Grocers' Association meeting with C. N. Herreid, federal food administrator for South Dakota.

For some time Mr. Herreid has urged upon Washington the necessity of taking action along this line in order to stimulate wheat production. Letters from prominent South Dakota farmers along the same line have been sent on to Washington for consideration. The resolution passed by the wholesalers' representatives was also sent to Mr. Hoover.

The resolution is signed by representatives of ten of the large wholesale houses of the state.

Wheat and Flour Stocks December 31, 1917.

The total stocks of wheat in commercial channels on December 31, 1917, as indicated by a partial tabulation of the food survey of the latter date, were approximately one-half as large as the commercial stocks on hand December 31, 1916, according to a statement just issued by the U. S. Department of Agriculture. In this connection it is pointed out that the commercial visible supply figures published by the Chicago Board of Trade show stocks on hand January 5, 1918, about 30 per cent of the commercial visible supply reported for January 6, 1917, while the visible supply reported by Bradstreet for January 5, 1918, was approximately 36 per cent of that reported for January 6, 1917.

The commercial stocks of wheat at the end of December, 1917, compared more favorably with those of a year earlier than did the stocks at the end of August, 1917, the holdings of December 31, 1917, being 50 per cent of those reported for the corresponding date in 1916, while the commercial stocks of August 31, 1917, were only 37 per cent of those for the same date in 1916. At the same time it is indicated that there was only a slight change in the relative importance of the commercial stocks of flour on the dates of the two surveys as compared with the corresponding dates a year earlier. On August 31, 1917, the commercial stocks of flour were about 75 per cent of the stocks reported on hand August 31, 1916, while on December 31, 1917, the stocks of flour were 70 per cent of those reported for the corresponding date in 1916. The total wheat crop of 1917 was approximately 650,000,000 bushels, as compared with 640,000,000 bushels for the previous year and with 806,000,000 bushels, the average for the five-year period 1911-1915.

State Food and Health Officials to Co-operate.

State health officers of the country will actively co-operate with the federal food administrators of the various states. This is a result of an offer by the American Public Health Association to have its members assist in carrying on the work of food conservation in the states. The administrators have been requested to communicate with the health officers of their respective states and decide upon a method of utilizing the newly acquired and valuable assistance.

Each state has a health department, the head of which is a member of the American Public Health Association. In each of the 3,100 odd counties there is a county health officer, and in many states township health officers as well. There are some 235 cities, each with a health officer in touch with the state health department. Altogether there are approximately 40,000 people employed in some capacity by these various health agencies.

There are also about 150,000 physicians closely connected with the local health officials, and the Public Health Association has assured the Food Administration that most of the physicians would be able to serve the cause of food administration in some capacity.

Hearings of American-Canadian Fisheries Conference.

The American-Canadian Fisheries Conference, which has held sessions in Washington, Boston and Gloucester, Massachusetts, and St. John, New Brunswick, will meet at Seattle on April 24, where hearings will be held relative to matters concerning the protection of the salmon in and around Puget Sound and Fraser River, and also protection of halibut—the

center of this industry being Seattle, Vancouver, Prince Rupert and Ketchikan on the Pacific. The use of Canadian and American ports by the fishing vessels of both countries will be discussed, and also questions relating to the whale industry, and to the Order in Council of Canada with reference to the purchase of bait and landing of fish by foreign vessels at ports of British Columbia, especially Prince Rupert, B. C. It is proposed to give all those whose interests are affected an opportunity to be heard. Following the sessions in Seattle, hearings will be held in Vancouver and Prince Rupert, B. C., Ketchikan, Alaska, and other places in the northwest, after which both delegations will go to Ottawa.

Both the Canadian and American delegates to the Conference will be present at the hearings. Dr. Hugh M. Smith, the U. S. commissioner of fisheries, and Mr. W. H. Found, superintendent of Canadian fisheries, will arrive in Seattle about April 17 to make a survey of the situation with respect to the salmon fisheries of Puget Sound and Fraser River.

Work of Pennsylvania Dairy and Food Bureau.

James Foust, dairy and food commissioner of the Pennsylvania Department of Agriculture, has issued a statement of the work of the Dairy and Food Bureau for last year, along with a record of the operation of the Bureau from 1907 to 1917, inclusive.

The wonderful growth in the Bureau's business, which was a record-breaker last year, was due to the number of special laws enacted in 1907 and 1909. Through these there was an increased number of prosecutions and the oleomargarine licenses increased from 380 in 1907 to 4,364 in 1917. The enforcement of the laws brought about the breaking up of wholesale fraud and deception practiced by moonshiners and peddlers, who, without a license, sold colored oleomargarine as and for butter. A large number of defendants were sent to prison and heavy fines were imposed. This class of dealers have been driven from the business and the industry has been transferred to merchants conducting high-grade stores. The effect took away the odium which formerly was attached to the sale and consumption of oleomargarine.

To afford an idea of the growth of the Bureau's work and of its cost to the people, the following comparative statement covering the years 1907 to 1917, inclusive, has been prepared:

Year	Samples Analyzed	Cases Terminated	Receipts	Expenditures
1907	7,400	664	\$ 55,732.63	\$ 78,455.88
1908	8,300	200	54,580.62	69,968.20
1909	6,200	797	86,594.15	83,700.00
1910	5,594	667	110,802.95	79,661.65
1911	8,200	1,029	120,993.48	83,083.15
1912	7,204	1,049	136,125.49	81,858.55
1913	6,846	1,025	173,789.76	75,587.12
1914	4,827	1,010	225,910.78	73,271.41
1915	8,939	1,165	279,055.40	85,901.36
1916	5,807	1,093	303,367.03	77,931.97
1917	8,701	1,169	373,150.48	81,320.31
Total	78,018	9,968	\$1,920,102.77	\$870,739.60

This table shows that the receipts for the year 1917, which are deposited with the State Treasurer for the use of the Commonwealth, were \$291,830.17 in excess of the expenditures, which are provided for by a special appropriation, and that for the entire period of 11 years the total receipts were \$1,049,363.17 in excess of what it cost to operate this branch of the public service.

BOOK REVIEWS

PRINCIPLES OF HUMAN NUTRITION. By Whitman H. Jordan, Director of the New York Agricultural Experiment Station. The Macmillan Co., N. Y., 1917. 450 pp. \$1.75.

This is a presentation of the subject-matter related to human nutrition adapted to the instruction of students with moderate scientific acquirements, whether in colleges, secondary schools, short courses, or schools of domestic science. The book has also a large following of general readers.

The aim has been to show the adjustment of reliable facts to a rational system of nutrition without insisting upon adherence to technical details that are not feasible in the ordinary administration of the family dietary. The treatment is practical as well as scientific.

HUMAN FOODS AND THEIR NUTRITIVE VALUE. By Harry Snyder. The Macmillan Co., N. Y., 1916. 362 pp., ill. \$1.25.

Presenting in concise form the composition and physical properties of foods and discussing some of the main factors which affect their nutritive value, this book is designed for students of college grade.

Prominence is given to those foods that are most extensively used in the dietary and to some of the physical, chemical and bacteriological changes affecting digestibility and nutritive value which take place during their preparation for the table. Dietary studies, comparative cost and value of foods, rational eating, and experiments and laboratory practice, are features of the work. The effect upon food of household sanitation and storage is also briefly discussed.

FOOD AND HEALTH. By Helen Kinne, Professor, and Anna M. Cooley, Assistant Professor of Household Arts Education, Teachers College, Columbia University. The Macmillan Co., N. Y., 1917. 312 pp., ill. \$0.65.

This book and its companion volume, *Clothing and Health*, make up a new series of text-books, "The Homemaking Series," designed for elementary schools outside the large city. The dominant thought of the series is to create an ideal of homemaking and to train boys and girls in rural communities to work for this ideal. The story of Marjorie Allen in school with Miss James, the teacher, and with the girls and the boys of Pleasant Valley, connects all the lessons of this series, wins and holds the interest, and builds up in the mind of the pupil an ideal of happy, healthful school and home life.

The project is presented in the form of a question at the beginning of each lesson. At the close of each lesson, exercises and problems review the main points of the lesson and give suggestions for home work based on the lesson studied in school. The plan is new. The method is new.

Food and Health aims to instruct by means of projects taken from daily life, and thus to vitalize the lessons in cookery and sanitation. The lessons center about the problem of the meal,—preparing and serving food at school and at home, together with the study of food values and of raising and selling as well as buying food. Such allied topics as water supply, cooking apparatus, the disposal of waste in the home kitchen, and other matters of sanitation, are woven into the lessons on nutrition and cooking.

THE CHEMISTRY OF PLANT AND ANIMAL LIFE. By Harry Snyder, formerly Professor of Agricultural Chemistry, University of Minnesota. The Macmillan Co., N. Y., 1916. 388 pp., ill. \$1.50.

This book discusses the composition of plant and animal bodies, the chemistry of the plant and of its food and growth, the chemistry of human foods, and animal nutrition, the digestibility and value of foods.

The elements and simpler chemical compounds present in plants and animals are first discussed and the relation which exists between chemistry and plant and animal life is indicated. Laboratory practice forms an important feature and questions are asked in connection with each experiment.

The book has been divided into two parts to adapt it to individual courses, the elementary principles of chemistry from an agricultural viewpoint being considered apart from the distinctive chemistry of plant and animal life. Where an extended course in general chemistry is given the first part may be omitted.

A LABORATORY MANUAL OF FOODS AND COOKERY. By Emma B. Matteson, Instructor in Home Economics in George Peabody College for Teachers, and Ethel M. Newlands, Director of Home Economics in the Buffalo Technical High School. The Macmillan Co., N. Y., 1917. 325 pp., \$1.50.

A textbook that approaches the study of cookery through experimental work upon the chemical, physical, bacteriological and biological properties of foods, this is a soundly scientific and thoroughly practical book, and one that will serve either as a text for an independent course in cookery, or as a laboratory manual for the general course in foods.

The subject matter is arranged topically according to the usual classification of food materials, each topic being developed by means of a series of experiments, which will give the student a first-hand acquaintance with the leading characteristics of each type of food, furnish a basis for a discussion of the procedures used in cookery, and give such a grasp of the principles involved as may enable the students to work without recipes or develop recipes of their own.

Some thoroughly-tested recipes are included, however, adequate in both number and variety.

War Bread from Former Rice Waste.

Rice polish, heretofore used for feeding stock, is now being employed as a valuable wheat substitute. Its new utilization has been introduced by Miss Rona K. Armstrong, special agent of the States Relations Service of the U. S. Department of Agriculture. Miss Armstrong was sent to New Orleans, La., to teach women to make war breads. While there she discovered that the waste which comes from the rice in its polishing process was being sold by the ton as a stock food. It is said that this product contains the most nutritive portion of the rice, and Miss Armstrong has had it placed on the market, where, sold for 2½ and 3 cents a pound, it is now being used extensively and successfully in a proportion of one-fourth rice polish to one-fourth wheat flour.

The placing of brown rice on the market as a cheap and wholesome addition to the Louisiana dietary is also to the credit of Miss Armstrong. Brown rice is rice with the first hull upon it, and that hull is rich in mineral content.

Minnesota's Recommendation for a Butter Standard.

The Minnesota creamery associations, at a meeting called at St. Paul by the National Creamery Buttermakers' Association for the purpose of getting Minnesota on record in regard to a butter standard, insisted that a recommendation be inserted in their behalf to the effect that no butter made from cream in which a neutralizer has been used be permitted to be sold as standard creamery butter, but that butter so made be labeled in a manner that will clearly indicate to the consumer that such butter is not standard creamery butter. This attitude is directly contrary to that of the National Creamery Buttermakers' Association and to the views expressed in the brief of Professor McKay of the American Association of Creamery Buttermakers, of which mention is made elsewhere in this issue. At the Minnesota meeting both Professor J. J. Farrell, president of the National Creamery Buttermakers' Association and Ex-Food Commissioner of Minnesota, and Secretary Martin H. Meyer greatly deplored this action on the part of Minnesota. The action was strongly endorsed by the present Commissioner, James Sorenson.

It is the purpose of the National Creamery Buttermakers' Association to file with the Joint Committee on Definitions and Standard a brief on the subject of butter standards, such action to be considered as representing a number of states, including Wisconsin, Iowa, Michigan, North Dakota and South Dakota.

Although many of the associations are at the present time on record as favoring a standard calling for eighty per cent fat and sixteen per cent water, there now seems to be a general desire to induce the Committee to establish merely an eighty per cent fat standard, lifting the ban on the amount of water which may be incorporated.

Of course, it still remains for the Joint Committee on Definitions and Standards to decide whether it can, in view of the existing law, establish any standards for butter.

Two Billion Pounds Annual Fish Yield.

The fisheries of the United States produce annually about 1,500,000,000 pounds of food fish, including shellfish, in a fresh condition. Alaska has a yearly output of about 250,000,000 pounds of fish canned, salted, and otherwise preserved. Reducing the latter to the fresh-weight basis, the total yield of the American fisheries can be stated as reasonably close to 2,000,000,000 pounds each year. The total output of the hatcheries of the United States Bureau of Fisheries in eggs, fry and other small fish is about four and a half billions annually.

Salmon Label Must State Variety.

Owing to the impression that has prevailed that canned salmon might be put on the market under a label which did not state the species or variety of salmon contained in the cans, a Seattle brokerage house recently addressed the following inquiry to Wendell Vincent, chief of the Seattle station of the U. S. Bureau of Chemistry:

"Will you please advise us if there has been any government ruling regarding the necessity of having the grade of salmon appearing on labels? Many of our customers throughout the country request that we ship them Chum salmon with a brand reading 'Salmon' only without the grade appearing. Packers actually

are using brands with this nomenclature but we have always acted on the assumption that this constituted misbranding and consequently have always had the grade appear."

Mr. Vincent replied as follows:

"You are correct in your assumption that failure to declare proper variety of fish on label constitutes misbranding, and I would be pleased to take proper steps to remedy any violations of this nature which you might call to my attention from time to time."

FOOD CONTROL OFFICIALS IN NEW YORK STATE.

The Department of Agriculture as such is no longer in existence in New York State; a Farms and Markets Department has been created, of which the Agriculture Department became a division, and the former State Department of Foods and Markets became another division.

In the summer of 1917 there was also created a State Food Commission, with a fairly large appropriation and extensive powers of food regulation.

This State Food Commission in November, 1917, was amalgamated with the U. S. Food Administration as far as New York State is concerned, under what is called "The Federal Food Board for New York State." The New York State Food Commission carries practically all the burden of expense of the department under the Federal Board, but the activities are carried on largely in the name of the U. S. Food Administration.

The official titles and officers of the Food Administration agencies in New York State are as follows:

State Food Commission.

Commissioners: John Mitchell, president, New York City; Dr. Jacob Gould Schurman, Ithaca, N. Y.; Charles A. Wieting, Cobleskill, N. Y.

Secretary: Charles H. Betts, Albany, N. Y.

Federal Food Board.

Chairman: John Mitchell, New York City.

Members: Dr. Jacob Gould Schurman, Cornell University, Ithaca, N. Y.; Charles A. Wieting, Cobleskill, N. Y.; Arthur Williams, U. S. Food Administrator, 1st Dist. (New York City, Westchester, Nassau and Suffolk Counties, included in first district), New York City; Charles E. Treman, U. S. Food Administrator, 2nd Dist., Ithaca, N. Y.

Executive Secretary: F. C. Henderschott, New York City.

BUREAU OF TRANSPORTATION AND DISTRIBUTION: *Director,* Cyrus C. Miller, New York City.

BUREAU OF CONSERVATION: *Director,* Howard E. Babcock, Ithaca, N. Y.

BUREAU OF LICENSES: *Director,* Allan Fox, New York City.

BUREAU OF PUBLICITY: *Director,* Augustine McNally, New York City.

BUREAU OF PRODUCTION: *Director,* Calvin J. Huson, Dresden, N. Y.

Council of Farms and Markets.

President: John Mitchell, New York City.

Secretary: Charles H. Betts, Albany, N. Y.

DIVISION OF AGRICULTURE: *Commissioner of Agriculture,* Charles A. Wilson, Albany, N. Y.

DIVISION OF FOODS AND MARKETS: *Commissioner of Foods and Markets,* Dr. Eugene H. Porter, Albany, N. Y.

FOOD REVIEW

KINGNUT.—Churned by Kellogg Products, Inc., Buffalo, N. Y. Prices: 1 lb. print, approximately 35c; 2 lb. print, 70c; 5 lb. print, \$1.70.

The day of nut margarine seems definitely to have arrived. According to U. S. Government data there were manufactured no longer ago than during February, 1917, a total of 608,330 pounds of uncolored nut margarine, whereas for February, 1918, the total ran to the astonishing figure of 9,652,041 pounds, of which but 750 pounds were colored. This is an increase of almost 1500%. Oleomargarine production as a whole increased 69.35% as compared with February, 1917. It is significant that while in February, 1917, nut margarine constituted about 2½% of the total margarine production, in February, 1918, the new "butter equivalent" constituted slightly more than 25% of total margarine production.

Although there are more than twenty brands of nut margarine on the market, not many of them are start-



ing in under such favorable auspices as those attendant upon Kingnut. This new nut margarine is the product of a concern well schooled in edible oils, Kellogg Prod-

ucts, Inc., being a subsidiary of Spencer Kellogg & Sons of Buffalo, the parent concern having located at Minneapolis, Minn., Edgewater, N. J., San Francisco, Cal., and Buffalo, N. Y., at which it has for many years crushed and refined vegetable oils—especially those used industrially.

The introduction of Kingnut marks their entry into the food industry. And that they definitely intend to become an important factor in that industry is signified by the fact that they propose to market ninety million pounds of Kingnut during its first year upon the market.

Kingnut is a high grade, carefully-made nut margarine, composed of refined, thoroughly-sterilized oil of the cocoanut (copra), peanut (arachis), and palm kernel, churned with pasteurized skimmed milk. The milk is ripened under strict scientific control.

All manufacturing processes are carried on in a new building erected especially for the purpose. All floors, churns and other appliances are kept thoroughly clean and are sterilized at frequent intervals. The factory employees are dressed in uniforms and immaculate cleanliness is the order of the day. In fact, no pains are spared to insure perfect sanitary conditions. The Buffalo plant at which Kingnut is made covers nearly seven acres and is said to be the largest plant in the country devoted exclusively to the churning of nut margarine. Its capacity is over two million pounds a week.

It is gratifying to realize that a house as well established as this one is actively interested in nut margarine. The product is a commendable one and one need have no hesitancy in recommending Kingnut for all purposes for which butter is used, and for all purposes for which cooking fats are used, Kingnut Cooking Fat, the companion of Kingnut.

Kingnut will be distributed through jobbers who have cold storage facilities as well as through the

branch houses of the parent concern which are located in some of the larger cities. An extensive advertising campaign, including the use of newspapers, magazines, street cars, painted bulletins and billboards is already under way.

N. Y. Merchants' Association Studies Food Problem

In April, 1917, the N. Y. Merchants' Association appointed a committee to study into the food problem, consisting of: John H. Love, chairman; William Fel-lowes Morgan, president of the Association; J. F. Birmingham, Lewis E. Pierson, Lincoln Cromwell, S. Frederic Taylor, Dr. O. S. Morgan, Harold Godwin, Horace Havemeyer, and John C. Orcutt, secretary.

On March 20, 1918, the committee issued its report, containing 39 printed pages, with elaborate maps and charts. The committee compresses an immense amount of information and analysis of the food situation. Its pamphlet is packed with valuable information. It is impossible to abstract the report, which is in itself an abstract.

In the words of the *N. Y. Journal of Commerce*:

"Out of the 57 varieties of investigation and probe and inquiry that have been promoted by as many types of reformers during the many years past, running back beyond memory, none has borne more marked evidence of sanity than that issued by the Merchants' Association Food Problem Committee.

"First of all it shows that the problem was approached by business men as a business study of a business problem, with an open-minded determination to get at the facts first of all and not merely to find evidence to support some preconceived theory or to justify the carrying out of some political or fanciful hobby. Chairman Love and most of his committee were not food merchants, and therefore had no disposition to camouflage any of the facts. They were business men who knew some of the fundamentals which permeate all business. And they were not politicians, with any boomlets to foster or balloons to inflate. They just went about finding what the food problem was, what made it what it is and what elements exist which offer hope of a solution.

"They found in their path the debris of more than a dozen political hopes of the past in the form of elaborate reports by 'expert' committees; all of them good reading but quite devoid of promise as offering any solution to the problem and certainly barren of all results, save passing excitement. Everywhere the committee found food producers and distributors quite as alert as anyone to accomplish improvement in efficiency, but all uniformly weary of newspaper exploitation. In fact the committee found that—

The public press has added to the consumers' perplexity by publishing cartoons and sensational articles regarding waste, hoarding and profiteering which careful investigation has shown to be untrue or at least much exaggerated.

"But it found a real problem at every hand. Some of its features were urban congestion, abandonment of the farm for the city, scarcity of farm labor, high costs of labor everywhere, growing demand for accommodation service on the part of the public, intricacy of function, increasing cost of handling, complication of city distributive systems that seem unavoidable; differences of social and economic conditions that baffle any uniform system of treating the problem.

"The significant thing about it all is that the committee makes no specific recommendation for a solution of the problem. Therein it is less resourceful than most reformers who develop into experts overnight and settle the whole thing (on paper) in a few hours. The sum total of its recommendations are 'chart, plat, study; first find out what the facts are and then perhaps some way out may be discovered.'

"In view of the elaborate plans which have been urged by ambitious reformers in the past, it is somewhat significant to find a committee like this reaching the final conclusion that:

After its close study of the situation for nearly a year it does not know nor can it ascertain that anyone else knows for a certainty whether terminal, wholesale, retail and public markets would reduce the cost of distribution. It might be increased."

Copies of the report may be had upon application to the Merchants' Association.



Celery in Cold Storage Practicable.

Celery that is packed in small, well-ventilated crates and carefully handled will keep in good cold storage for three months, or longer, according to results obtained in a four-year test just reported by the U. S. Department of Agriculture in Bulletin 579, "Celery Storage Experiments." Heretofore it has been difficult to secure cold storage space for celery because this product often spoiled, largely due to careless handling, and thereby prejudiced storage house operators. The old method of storing celery in the field and in houses of the cellar and semi-cellar type is not satisfactory because temperature and moisture conditions cannot be controlled.

The objects of the experimental work with celery storage were to determine the factors which hasten decay in celery in storage houses; to learn the best methods of reducing the loss of stored celery by decay and mechanical injury; to determine the best type of crate in which to pack celery for cold storage; and to study the effect of the temperature of the storage room on the keeping quality of the celery.

The celery used in the experiments was grown and stored in western New York. Each experimental lot was packed in the field and crated in the storage house by representatives of the Department of Agriculture. In every instance the celery was free from disease and was so handled that the different lots were comparable. Six types of crates were used—a standard crate, a partition-ventilated crate, a 16-inch crate, and a 14, a 10 and an 11-inch crate.

The smaller crates appear to remove the two chief causes of spoilage—poor ventilation and breakage. In every instance the decay was much less in the small and partitioned crates than in the standard crates. Of the crates used during two or more years, the 14-inch gave the best results, followed by the 16-inch, the partitioned, and the 11-inch solid head, in the order given. Small crates cost a little more than the standard crate in proportion to their capacity, but this disadvantage is more than offset by the smaller percentage of breakage. Small crates are preferred by many storage house managers and handlers of celery, because of the ease in handling as well. In a market test made in January, 1916, celery in small crates sold for a much higher price than similar celery in standard crates handled in exactly the same way.

Better Meat-Packing Methods.

Speaking before the recent convention of the American Meat Packers' Association, Myrick D. Harding called attention to a long list of wasteful practices in packing houses. Portions of meat suitable for sausage or canning have been allowed to go into tankage instead of food. Clean fat fit for food has been permitted to mix with inedible material of contaminated nature and found its way into the inedible fats. Savings of 3 pounds of edible fats for each steer killed and 1 pound for each hog, and half a pound for each sheep would add nearly 7,000,000 pounds of food fat yearly to the country's larder. The waste of good beef fat is particularly large. Too much fat is left on carcasses when sold to retail butchers who trim it off and dispose of it for soap grease, whereas it might be saved by more careful trimming in the packing house and worked up into food-fat products. The packers have followed local dressing customs which are wasteful, illustrated by lambs which are shipped with the caul and kidney exposed to New York, in

hog style for other eastern markets, and with rib bone broken for Boston. A standard method of dressing would conserve meat and fats at the packing houses. Similar wastes are found in present methods of trimming bacon and hams. The cure for it, according to Mr. Harding, is to stop the waste of fat at the packing houses, increase the percentage of edible fat, and save a greater proportion of soap fats by the use of appliances which catch them in tankage and cooking waters. Statistics show that from 3 to 6 pounds of fat from a steer, 1 to 1½ from a hog, and 1 to 1¼ per sheep can be saved by installing an efficient modern fat separator.

The Chicken First.

C. H. Benjamin, the poultry expert recently sent to Minnesota to assist in the gospel of increased poultry production as a means of conserving the meat supply, has arranged a table which sends the chicken to the head of the class. Mr. Benjamin has determined the chicken in its protein, fat, ash and water content and compared it with ducks, geese, turkeys, the beef steak and the pork chop and the result is interesting. Here it is, the pound being the basis of computation:

	Protein.	Fat.	Ash.	Water.	Total Indigestible Protein.
Chicken	21.9	8.9	1.1	68.4	...
Fowl	19.8	18.2	.8	59.5	1.9
Beef steak	18.9	18.5	1.0	61.9	...
Pork chop	16.6	30.1	1.0	52.0	...
Turkey	21.5	18.0	.9	57.4	1.9
Goose	16.1	27.3	.8	54.0	2.2
Duck	17.8	18.0	1.0	61.1	1.8
Eggs	12.7	8.8	.7	65.5	1.1

Incidentally, Mr. Benjamin is ready to show that, as individuals, we consume 49 pounds of chicken every year (the amount statistics says we consume per person per year in the United States), 50.2 pounds of beef steak, 33½ dozen eggs and accord to the pork chop such a preference above all other foods that we consume 118 pounds per person every year. And this in view of the fact that it takes four pounds of corn to produce one pound of chicken and eight pounds of corn to produce one pound of pork; that it takes ten weeks to produce 100 pounds of chicken as against seven months to produce 100 pounds of pork; and three weeks to fatten 100 pounds of chicken to 200 pounds as against two months to fatten 100 pounds of pork to 200 pounds.

The Government is urging increased swine production because it is the quickest and cheapest means of producing meat and fat.

"But," says Mr. Benjamin, "the back yard chicken yard will help the meat supply while the pig is growing."

Artificial Fishing Grounds.

To increase the fish supply, Capt. John Klein, a Long Island fisherman, suggests that artificial fishing grounds be built along our coasts. These fishing grounds can be made at small expense without obstructing navigation by throwing overboard logs, discarded furniture, old tinware, china and other refuse not easily washed away, forming beds on the ocean bottom, 50 square feet or more in area and 1 or 2 feet deep. Sea vegetation grows on such junk, furnishing a breeding place for crabs, periwinkles, mussels and other fish food, and fish are thereupon attracted to such feeding places. These artificial banks also form refuges for food fish pursued by sharks. Captain Klein says that an acre of water near a city can be made to produce by this method ten times more food than an acre of land. He himself has for years operated artificial fish grounds and brought good catches to market in seasons when fishermen in open water were catching little or nothing.

How an Ice Cream Company Evaded the Law.

A story of trap doors, false partitions and other ingenious devices to hide from prying eyes the secrets of an ice cream factory mixing room, was revealed in connection with the recent disposal of the second case against the Kalodimos Brothers Candy & Ice Cream Company of Chicago, charged with the substitution of cocoanut oil for butter fat in the manufacture of ice cream. After the presentation of evidence, the Assistant Attorney General, Judge Jarecki, in the Municipal Court assessed a fine of \$100 and costs against the defendant concern and judgment was entered in default of appearance. The same concern was fined \$15 and costs on a similar charge last July.

Last spring complaints reached Superintendent Newman of the Division of Foods and Dairies of the Illinois Department of Agriculture, that ice cream manufactured by the Kalodimos brothers was below grade. Samples analyzed by the state chemists showed that the butter-fat content was below the standard for ice cream and that cocoanut oil had been used to make up a 50 per cent shortage of butter fat.

The trouble was not with the supply of cream, however, as samples of this when analyzed were found to comply with the law. The inspector assigned to the case called at the factory of the ice cream company.

"I would like to see your mixing room," he told John Kalodimos.

"Upstairs," said Kalodimos, busying himself controlling the inflow of cream carried to the freezing apparatus through pipes from the ceiling.

The inspector climbed the stairs. Seated on an empty can near the door to the mixing room was an employe.

"I'm sick," said the man.

The inspector tried the door. It was locked. He returned to the ground floor.

"The man in charge of that room is out," said Kalodimos. "He is the only one who has the key."

The inspector secured a file and returned to the second floor.

The man who had pleaded sickness was not in sight. The inspector broke the lock. As the door crashed inward Kalodimos leaped up the stairs.

"What are you doing in here?" he demanded.

"Never you mind what I'm doing," retorted the inspector. "I'm here. What I want to know from you is, what's this man doing in here. How did he get in? I thought nobody had a key around here."

He pointed to some empty sacks where was huddled the man whom he had first seen feigning sickness in the hallway.

Sugar, cocoa and gelatin barrels were stored in this room.

"What's back here?" demanded the inspector.

He pointed to a section of the wall which at first appeared to be built solidly with shelving. The shelves were loaded with bottles and cans. Closer examination showed that the shelving concealed a door.

"There is nothing in there," asserted the proprietor. "We used to make candy in there."

"Have you the key?"

"No, the barn boss has the key."

"What's the idea of having these shelves in front of the door?"

Kalodimos shrugged his shoulders.

The inspector took hold of one of the shelves, after he had removed the bottles and cans. He found it movable on the brackets.

"Don't trouble yourself," he said to Kalodimos as the latter, armed with a hammer, suddenly showed signs of a desire to assist. "These boards come off without tools."

The file was again employed to force the lock, the door swung inward and the inspector stepped into a room fully equipped with modern ice-making machinery. The machinery was still warm, there were two pasteurizers, and steam was still issuing from two copper kettles.

"So this is the place you make candy? I thought you had nothing in this room."

Again the answer was a shrug of the shoulders.

The proprietor was standing with his back against the wall.

"Come, move aside, I'll take a look here, too," said the inspector as he pushed the ice cream man to one side.

Boards of a different shade from the partition had attracted the attention of the inspector. He tried the panels and found they formed a sliding door. On his hands and knees he crawled through the opening. The inner room was dark. There were no windows. The inspector's flashlight played about the room. In a corner was a barrel. He examined it. It was about three-quarters full of cocoanut oil. Beside it were two cans which had contained melted cocoanut oil, showing evidence of recent use.

"What's all this?" said the inspector.

Kalodimos shrugged again and replied, "I don't know."

"Do you know what cocoanut oil is?" demanded the inspector.

"I do not know," replied the manufacturer.

"Go down stairs and bring me two jars from my sample case."

Kalodimos obeyed, returning with the jars, and after securing his samples, the inspector departed.

A second series of samples analyzed last July showed that the ice cream concern had not mended its ways and the second suit and fine imposed by Judge Jarecki was the result.

Results With Hogs On Garbage.

Eight pigs, averaging 52 pounds each, were selected for a garbage feeding test at the Iowa Experiment Station by Prof. John M. Evvard, of whom the "Breeder's Gazette" says that, "whenever a problem of swine feeding arises, he goes out and puts the question to the pig." The test was planned in anticipation of the garbage disposal problem at our army cantonments. These animals were offered an average of 23.6 pounds of garbage daily, and consumed 19.6 pounds, which they converted into 0.96 of a pound of live pork. They did this for 70 days, averaging 120 pounds on August 28. Then they were divided into two groups for the next 30 days, one group receiving garbage as before, while the others were self-fed all the wheat middlings they wanted in addition to the garbage. The animals on middlings consumed the grain, eating less garbage, but made no better gains than the pigs on straight garbage, leading to the conclusion that grain should be fed—preferably corn—only when there is not enough garbage to go round. Garbage is not difficult to feed if pens and troughs are kept scrupulously clean. With hogs at \$20 per hundredweight, the garbage from a kitchen serving 100 persons would be worth \$1.15 for the first 70 days of pig feeding, and 83 cents for the next 30 days. Twenty-cent hogs will pay nearly a cent a pound for garbage, and the kitchen refuse from a single big cantonment will make 750,000 pounds of pork in a season. These results have been given to farmers and others who have taken garbage contracts.

Micro-Organism to Determine Preservative Value of Spices.

In an article on the use of micro-organisms in determining the preservative value of spices, published in the February issue of the *Journal of Industrial and Engineering Chemistry*, Freda M. Bachmann says that the molds, yeasts and bacteria show a marked variation in sensitiveness to different brands of spices.

The amount of growth of such organisms in a given time on media containing spice may be used as a means to determine the relative preservative values of the different brands of spice. In using this method spices of molds, yeasts and bacteria were grown on nutrient agar containing varying amounts of spice.

Report of Cold Storage Holdings March 1, 1918.

Reports from 483 cold storages show that their rooms contain 48,183,037 pounds of **American Cheese** while on February 1, 477 storages reported 60,726,428 pounds.

Reports from 568 storages show that their rooms contain 1,547,561 barrels and 3,726,824 boxes of **Apples**.

Reports from 386 cold storages show that their rooms contain 18,808,303 pounds of **Creamery Butter** while on February 1, 384 storages reported 26,617,921 pounds.

Reports from 137 cold storages show that their rooms contain 862,434 pounds of **Packing Stock Butter** while on February 1, 145 storages reported 1,566,269 pounds.

Reports from 191 cold storages show that their rooms contain 9,807,780 pounds of **Frozen Eggs** while on February 1, 189 storages reported 12,308,283 pounds.

The total stocks of **Frozen Beef** reported by 383 storages amounted to 275,254,692 pounds, while the total stocks reported by 381 storages on February 1 amounted to 292,201,690 pounds.

The total stocks of **Cured Beef** reported by 366 storages amounted to 37,608,731 pounds, while the total stocks reported by 369 storages on February 1 amounted to 38,791,289 pounds.

The total stocks of **Lamb and Mutton** reported by 212 storages amounted to 7,857,163 pounds, while the total stocks reported by 204 storages on February 1 amounted to 6,317,356 pounds.

The total stocks of **Frozen Pork** reported by 361 storages amounted to 104,243,874 pounds, while the total stocks reported by 349 storages on February 1 amounted to 61,646,499 pounds.

The total stocks of **Dry Salt Pork** reported by 458 storages amounted to 402,520,163 pounds, while the total stocks reported by 445 storages on February 1 amounted to 341,385,928 pounds.

The total stocks of **Sweet Pickled Pork** reported by 539 storages amounted to 368,207,181 pounds, while the total stocks reported by 528 storages on February 1 amounted to 321,332,943 pounds.

The total stocks of **Lard** reported by 555 storages amounted to 65,227,302 pounds, while the total stocks reported by 542 storages on February 1 amounted to 59,042,968 pounds.

The total stocks of **Frozen Poultry** reported by 311 storages amounted to 57,254,096 pounds, while the total stocks reported by 296 storages on February 1 amounted to 67,395,424 pounds.

The total stock of **Frozen Broilers** reported by 198 storages amounted to 7,395,331 pounds, while the total stocks reported by 195 storages on February 1 amounted to 8,250,415 pounds.

The total stocks of **Frozen Roasters** reported by 186 storages amounted to 14,504,955 pounds, while the total stocks reported by 182 storages on February 1 amounted to 17,978,167 pounds.

The total stocks of **Frozen Fowls** reported by 216 storages amounted to 12,582,228 pounds, while the total stocks reported by 199 storages on February 1 amounted to 15,090,069 pounds.

The total stocks of **Frozen Turkeys** reported by 231 storages amounted to 9,830,697 pounds, while the total stocks reported by 229 storages on February 1 amounted to 10,515,828 pounds.

The total stocks of **Miscellaneous Frozen Poultry** reported by 258 storages amounted to 12,940,885 pounds, while the total stocks reported by 248 storages on February 1 amounted to 15,180,719 pounds.

Partial Report of Cold Storage Holdings April 1, 1918.

The 381 storages that reported **Creamery Butter** showed total stocks of 14,607,017.

The 138 storages that reported **Packing Stock Butter** showed total stocks of 1,328,070 pounds.

The 478 storages that reported **American Cheese** showed total stocks of 38,310,634 pounds.

The 434 storages that reported **Case Eggs** showed total stocks of 342,659 cases.

The 185 storages that reported **Frozen Eggs** showed total stocks of 8,835,665 pounds.

More Food Shows.

Boston held a Food Show the week of April 1. Washington is to have its show the week of April 27, and New York will fall in line the week of June 14.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,256,634. Malt product (for bakers' use). Henry G. Akers and William P. Kaufmann, Toronto, Ontario, Canada, assignors to Malt Products Company of Canada, Limited, same place.

1,256,695. Loaf-pressing machine. Henry H. Hungerford, Chicago, Ill., assignor to National Biscuit Co., Jersey City, N. J.

1,256,758. Process of refining sugar. Robert R. Williams, Manila, P. I.

1,256,885. Cherry-pitting machine. Melville E. Dunkley, Kalamazoo, Mich.

1,256,952. Recovery of sugar from molasses. Fritz Tie-mann, Berlin, Germany.

1,257,007. Movable floor for bakers' ovens. John Lar-raburu, San Francisco, Cal., assignor to Hygienic Baking Corporation, same place.

1,257,017. (Fruit) sizer adjuster. Donald Parker, Tampa, Fla.

1,257,018. Fruit-sizing apparatus. George D. Parker, Riverside, Cal.

1,257,410. Article of food. Hulda A. Shepard, Lakeside, Wash.

1,257,429. Means for extracting chaff from ground coffee. Levi Warstler, Louisville, Ohio.

1,257,497. Pastry-making apparatus. Edward H. Lanier, Cincinnati, Ohio.

1,257,498. Pastry molding and baking apparatus. Edward H. Lanier and Frank K. Driesbach, Cincinnati, Ohio.

1,257,574. Device for washing fruit. Alphonse F. Bis-ceglia, San Jose, Cal.

1,257,584. Process for pickling olives. William V. Cruess, Berkeley, Cal. (Dedicated to the public.)

1,257,677. Cake-coating machine. William Costello, jr., Philadelphia, Pa.

1,257,719. Asparagus cutter and grader. David Low and Albert R. Thompson, San Jose, Cal.; said Thompson assignor to said Low.

1,257,966. Apparatus for arranging macaroni or like alimentary pastes on rods or the like. Piladi Barducci, Naples, Italy.

1,258,047. Method of preparing precooked food products. Bernhard Remmers, Philadelphia, Pa., assignor to Armour Grain Co., Chicago, Ill.

1,258,059. Composition of matter for use as a food. John M. Stukes, Delhi, La.

1,258,076. Process for treating corn. Adolph Woolner, jr., Peoria, Ill.

1,258,245. Pepper-peeling machine. Mark Riedel, Pomona, Ga.

1,258,322. Machine for decorating confections. Herrman G. Doellinger, Davenport, Iowa.

1,258,427. Soy-bean food. Magotaro Making, San Francisco, Cal.

1,258,438. Process of making soft cheese and the product thereof. Joseph Nusbaum, Philadelphia, Pa., assignor to P. E. Sharpless Co., same place.

1,258,530. Food product. Frank H. Bryant, Los Angeles, Cal.

1,258,627. Method of manufacturing grape-juice. Paul R. Welch, Westfield, N. Y.

1,258,793. Bread-making. Fenwick R. Lovelace, Harold S. Lovelace, and Anton M. Holm, Rockford, Ill.

1,258,817. Paste-drier. Arthur Rossi, San Francisco, Cal.

1,258,866. Machine for working and shaping dough or other plastic substances. John L. Burgoyne, San Francisco, Cal.

1,258,958. Fruit-sizing machine. George C. Starcher, Auburn, Ala.

1,258,996. Method of making composition butter. Samuel M. Dick, Minneapolis, Minn., assignor of one-half to Francis E. Mick, same place.

1,258,997. Artificial butter. Samuel M. Dick, Minneapolis, Minn., assignor of one-half to Francis E. Mick, same place.

1,259,213. Fruit-sizing machine. Thomas Crawford, Anaheim, Cal., assignor to Thomas Crawford, Inc.

News from Washington

Wheat Consumption Must Be Reduced.

The United States Food Administration on March 23 issued the following:

If we are to furnish the Allies with the necessary proportion of wheat to maintain their war bread from now until the next harvest—and this is a military necessity—we must reduce our consumption to 21,000,000 bushels a month as against our normal consumption of about 42,000,000 bushels. Reserving a margin for distribution to the Army and for special cases, this leaves for general consumption approximately $1\frac{1}{2}$ pounds of wheat products per person per week. Many of our consumers are dependent upon bakers' bread. Such bread must be durable and therefore requires a larger proportion of wheat products than cereal breads baked in the household. Our Army and Navy require a full allowance. The well-to-do in our population can make greater sacrifices in the consumption of wheat products than can the poor. Moreover, our population in the agricultural districts, where the other cereals are abundant, are more skilled in the preparation of breads from these other cereals than the crowded city and industrial populations.

With improved transportation conditions we now have available a surplus of potatoes. We also have in the spring months a surplus of milk, and we have ample corn and oats for human consumption. The drain on rye and barley as substitutes has already greatly exhausted the supply of these grains.

To effect the needed saving of wheat we are wholly dependent upon the voluntary assistance of the American people and we ask that the following rules shall be observed:

1. Householders to use not to exceed a total of $1\frac{1}{2}$ pounds per week of wheat products per person. This means not more than $1\frac{3}{4}$ pounds of Victory bread containing the required percentage of substitutes and one-half pound of cooking flour, macaroni, crackers, pastry, pies, cakes, wheat breakfast cereals, all combined.

2. Public eating places and clubs to observe two wheatless days per week, Monday and Wednesday, as at present. In addition thereto, not to serve to any one guest at any one meal an aggregate of breadstuffs, macaroni, crackers, pastry, pies, cakes, wheat breakfast cereals, containing a total of more than 2 ounces of wheat flour. No wheat products to be served unless specially ordered. Public eating establishments not to buy more than 6 pounds of wheat products for each ninety meals served, thus conforming with the limitations requested of the householders.

3. Retailers to sell not more than one-eighth of a barrel of flour to any town customer at any one time and not more than one-quarter of a barrel to any country customer at any one time, and in no case to sell wheat products without the sale of an equal weight of other cereals.

4. We ask the bakers and grocers to reduce the volume of Victory bread sold, by delivery of the three-quarter pound loaf where one pound was sold before, and corresponding proportions in other weights. We also ask bakers not to increase the amount of their wheat flour purchases beyond 70 per cent of the average monthly amount purchased in the four months prior to March 1st.

5. Manufacturers using wheat products for non-food purposes should cease such use entirely.

6. There is no limit upon the use of other cereals, flours, and meals, corn, barley, buckwheat, potato flour, et cetera.

Many thousand families throughout the land are now using no wheat products whatever, except a very small amount for cooking purposes, and are doing so in perfect health and satisfaction. There is no reason why all of the American people who are able to cook in their own households cannot subsist perfectly well with the use of less wheat products than one and one-half pounds a week, and we specially ask the well-to-do household in the country to follow this additional program in order that we may provide the necessary marginal supplies for those parts of the community less able to adapt themselves to so large a proportion of substitutes.

In order that we shall be able to make the wheat exports that are absolutely demanded of us to maintain the civil population and soldiers of the Allies and our own Army, we propose to supplement the voluntary co-operation of the public by a further limitation of distribution, and we shall place at once restrictions on distribution which will be adjusted from time to time to secure as nearly equitable distribution as possible. With the arrival of harvest we should be able to relax such restrictions; until then we ask for the necessary patience, sacrifice and co-operation of the distributing trades.

Separation of "No-Wheat" Hotels and Restaurants From Others Is Proposed.

Following up the pledge given by 500 leading hotel and restaurant men from all parts of the country that they would banish wheat in every form from their establishments until released from that pledge, the U. S. Food Administration has suggested to federal food administrators and to state hotel chairmen a method of separating the "no-wheat" eating places from the others, which, it is believed, will protect those patriotic hotel men who gave their pledge from unfair competition on the part of rivals in business.

Public eating places and clubs are divided into two general classes:

Class one includes all high-grade hotels and restaurants which, in the opinion of the hotel chairman for each state, could follow to the letter the pledge adopted by managers and proprietors at their meetings in Washington and New York. All clubs and dining cars should come under this classification. A list is to be prepared by the federal food administrator and the hotel chairman, in conjunction with the latter's committee, of all hotels, restaurants, and clubs in each state which, in the opinion of this committee should be able to carry out the terms of the resolution, and to the manager of each of these establishments a copy of the resolution is to be sent, with a letter advising him of the action taken in New York and requesting him to join with all others in this classification in making the application of this resolution general. Dining cars will be handled separately in Washington. It is asked that lists of those who agree to live up to the resolution be printed prominently in all newspapers, where possible.

Class two, including all other public eating places, must be governed by the new wheat conservation program, which means that they shall adopt a maximum ration of wheat flour (or its wheat equivalent contained in such products as victory bread, macaroni, wheat breakfast cereals, etc.), of 6 pounds of wheat flour for every 90 meals served. In addition thereto, they shall not serve in the aggregate a total

of any products containing more than 2 ounces of wheat flour to any one guest at any one meal.

Wheatless days and meals must be observed, and by "wheatless" is meant no wheat flour in any food served, except that amount contained in "victory" bread, which can be served in public eating places on wheatless days and for wheatless meals. No wheat products shall be served unless ordered. In practically every case this class of eating place will be governed by baking rules and regulations, which will assist materially in securing their compliance with this program.

This program will be enforced by inspection and investigation, and where violations are reported, a hearing open to the public and the press will be held by the federal food administrator or his duly appointed representative. Where violations are proved, provided such violations are contrary to the baking rules and regulations, the baking license will be revoked. If eating places guilty of violation purchase their bakery products, bakers will be advised not to sell to them.

Inspection of Bakeries by Food Administrators.

A standard system of inspection by which the federal food administrator in each state may keep a close check upon commercial bakers is being worked out by the Department of Agriculture and the Food Administration. In order to protect from the unscrupulous those bakers who are observing the rules and regulations of the Food Administration, it has been found necessary to perfect machinery for keeping a careful check upon all who come under the requirements for license.

A special committee, composed of representatives of the Bureau of Chemistry, Department of Agriculture, and of the Food Administration, is working out general policies for the inspection of bakeries and the enforcement of baking regulations. The administrative work will be in charge of a member of the Food Administration staff. Local organization and inspection will be under the supervision of the federal food administrator for each state, who will appoint some member of his staff to handle commercial baking problems. He will either take charge of inspection and regulation or where conditions permit will work in co-operation with a member of some existing state agency interested in the enforcement of food laws. He is expected to secure the assistance of inspectors for the local bureaus of chemistry; departments of weights and measures; dairy, drug, and food commissions; boards of health, and similar agencies.

Inspections of all bakeries will be made periodically and at irregular intervals. Where violations are detected revisits will be made to determine whether lenient action has been sufficient to insure strict observance of the regulations. The federal food administrators will take such action as they deem expedient in the case of minor violations.

Serious violations will be dealt with by officials in Washington, who are empowered to revoke licenses and force disloyal food handlers out of business.

Committee to Investigate Milling Industry.

A conference was recently held by Mr. Hoover and the Millers' Committee with regard to complaints from certain sections that certain millers have not conformed to the Food Administration regulations as to profits, particularly in the sale of feeds.

The Food Administrator and the Millers' Committee consider that the patriotic efforts of the great majority of the milling trade in support of the Government during the war should not be brought into discredit by the action of a minority. The Millers' Committee has, therefore, asked that a complete inquiry should

be made into the conduct of the milling industry under the regulations. President Wilson has approved the appointment of Dr. Frank W. Taussig, chairman of the United States Tariff Commission, as head of a committee for this purpose. Dr. Taussig will have associated with him a representative of the Federal Trade Commission, a member of the Food Administration, a representative miller, and a representative producer. The Food Administrator is also referring to the committee for study and report proposed alterations of the Milling Regulations which experience has demonstrated that it will be desirable to reconsider before next season.

Amendments and Additions to Regulations Governing Licensees Manufacturing Bakery Products.

The most important changes, all of them made necessary by the short supply of wheat flour, and all effective April 14, are as follows:

1. Licensees must increase the substitute content of all bread and rolls beginning April 14.
2. Licensees must use substitutes in all bakery products beginning April 14, as follows:

	Per Cent
Class 1—Bread and rolls	25
Class 2—Sweet yeast dough goods.....	33 $\frac{1}{3}$
Class 3—(a) Crackers	15
Class 3—(b) Biscuits (cookies) and ice cream cones	33 $\frac{1}{3}$
Class 4—(a) Cakes	33 $\frac{1}{3}$
Class 4—(b) Pies	33 $\frac{1}{3}$
Class 4—(c) Fried cakes	33 $\frac{1}{3}$
Class 4—(d) Pastry	33 $\frac{1}{3}$
Class 5—Batter cakes, waffles, quick breads and Boston brown bread	66 $\frac{2}{3}$

3. No public eating place may serve more than 2 ounces of bread and rolls (Class 1) or 4 ounces of quick breads (Class 5) to any one person at any one meal.

4. Bakers are permitted to bake a three-quarter-pound loaf of bread and are urged, as a conservation measure, to introduce it and push its sale.

5. The use of the words "milk" or "cream" on wrappers, signs, etc., is no longer prohibited, but milk bread must still be sold at the same price as bread made without milk.

6. Class 5 now includes quick breads such as corn bread, baking powder biscuits, muffins, etc., as well as Boston brown bread, griddle cakes and waffles. Such breads must contain 66 $\frac{2}{3}$ per cent of substitutes. Bakers are urged to introduce these quick breads as a wheat saving measure.

No Restriction on Sale of Small Packages of Flour.

The Food Administration announced on April 4 that it no longer prohibits the sale of flour in packages containing less than 12 pounds. In order to make it easier for the housewife to comply with the "fifty-fifty" regulations it was deemed advisable to enable her to purchase flour in smaller quantities. Licensed dealers in flour have been advised that they may market several sized packages weighing less than 12 pounds, with a 2-pound minimum.

The smaller packages, in addition to making it unnecessary for the housewife to purchase wheat substitutes in large quantities, should encourage her to reduce wheat consumption. The Food Administration believes that a person having only a small quantity in the home is more apt to receive a conservation appeal in a receptive mood than one who has a comparatively large supply on hand.

Plenty of Substitutes Now.

According to an estimate made public by the Food Administration following a canvass of the whole country, the actual milling output of corn meal increased from 3,000,000 barrels in October to nearly 6,000,000 barrels in March. The estimated maximum capacity for milling corn meal in the United States mills running twenty-four hours per day, thirty days per month, exceeds 9,000,000 barrels per month, an increase of 200 per cent over last year.

In view of this great output, Americans are now in a position to observe total abstinence from wheat flour and depend wholly on corn meal and other corn products as their source of breadstuffs. Our normal consumption of wheat flour is 8,000,000 barrels per month.

It is estimated that during the past eighteen months the output of corn flour has increased 500 per cent. The estimated production of corn flour for October and for March is placed at 250,000 and 540,000 barrels, respectively.

There is now enough corn meal being turned out to care for all demands in the United States. The remarkable increase in output, which is certain to become greater each succeeding month, is due in considerable part to the conversion of much wheat-milling machinery into corn-milling machinery.

As substitutes for wheat, Americans have now not only sufficient corn foods to permit them to abstain wholly from the use of wheat until the next harvest, but also immense quantities of potatoes and other substitutes such as oats, rice and barley.

Combine Substitutes.

The U. S. Food Administration is recommending to bakers throughout the country that in the use of wheat substitutes in Victory bread they employ a combination rather than rely on a single substitute. Substitutes may be combined in various ways to equal the required amount of substitutes, and some of these combinations have been found to make a better quality bread than that containing only one. Some mixtures of corn and rice have been found to work better than corn alone, and potatoes with cereal substitutes make a better bread than potatoes alone as a substitute.

The Food Administration suggests that instead of using 80 pounds of potatoes and 80 pounds of wheat flour, bakers use 40 pounds of potatoes—which minus the water content equals ten pounds of substitute—and ten pounds of cornmeal or some other cereal substitute. This results in the use of 80 per cent of wheat flour and the required twenty per cent of substitutes in making Victory bread.

Bakers Organize to Make Standard Victory Bread.

The National Association of Master Bakers has appointed a technical service committee, with Win M. Campbell, of Kansas City, as its chairman. This committee has held a meeting in Chicago and completed an organization which will cover every state in the Union.

Under its direction, formulas for the use of various kinds of cereals as substitutes for wheat flour are being perfected by experts in the trade and will be sent to the presidents of state associations of bakers and to the section leaders of the national association for distribution to every member of the baking trade. In addition, practical demonstrations of the best methods of baking Victory bread will be given in every county in the United States.

In short, the technical service committee proposes to place the experience of the ablest bakers of the country at the service of every member of the trade in order that he may both help himself and the Food Administration by producing a Victory bread that will satisfy the most exacting taste.

Macaroni Manufacturers' Wheat Allowance.

In accordance with an agreement between the Army and the Navy purchasing departments and the U. S. Food Administration, manufacturers of macaroni and kindred products shall be allowed such excess of wheat flour over their 70 per cent allotment as is demanded by any new Army and Navy contracts over and above the amounts supplied last year to the Army and Navy. That is, in computing this excess, the amount of wheat flour used last year for Army and Navy purposes shall first be deducted. The Food Administration, however, does not guarantee to any individual manufacturer that wheat flour in excess of the 70 per cent allotment will be provided.

Wheat for Hard Bread and Navy Biscuit.

In accordance with an agreement between the Army and Navy purchasing departments and the U. S. Food Administration, manufacturers of "Hard Bread" and "Navy Biscuit" shall be allowed such excess of wheat flour over their 70 per cent allotment as is demanded by any new Army and Navy contracts over and above the amounts of "Hard Bread" and "Navy Biscuit" supplied last year to the Army and Navy. That is, computing this excess, the amount of wheat flour used last year for "Hard Bread" and "Navy Biscuit" for Army and Navy purposes shall first be deducted.

Requisitioning Wheat.

No general order requisitioning wheat has been sent out by the Food Administration. The various State Food Administrators in the wheat states have been instructed—in order to enable the continuous shipment of wheat to the Allies—to appeal to farmers in the middle and southern states, that they should market their residue of wheat after seed requirements by May 1, and in the extreme northern states by May 15.

The attention of the State Administrators has been called to the many reports from loyal farmers of German farmers refusing to market any of their wheat. Administrators have been asked to investigate such cases and to direct such persons to at once market their

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wheat. No publicity will be given to individual cases unless they should refuse this specific direction and it should become necessary to requisition such parcels on behalf of the Government.

The Food Administration Reports:

Counties in the northwestern part of Oklahoma are voluntarily restricting their flour allowance to two pounds per month per capita and all residents who have on hand more than the "patriotic portion" are turning in the excess for export to the Allies.

From Houston, Texas, comes the report that flour in sacks of from twelve to ninety-six-pound capacity is being returned for export.

The Federal Food Administrator of Indiana wires that he has asked the people of that state to go on a strictly wheatless diet until next harvest and that they will comply with the request.

The women of Berkeley, Calif., at a mass meeting called by the local unit of the Council of National Defense pledged themselves to abstain from the use of wheat flour and wheat products in their homes.

Many citizens of Dublin, Ga., answering the appeal, have pledged total abstinence from wheat until harvest.

Arkansas' Response.

A substantial answer to the appeal of the Food Administration against hoarding has been received from forty-two counties in Arkansas where 2,511,800 pounds of flour have already been returned to dealers by families which had more than the "patriotic portion." Sebastian county alone returned 2,350 barrels. Reports indicate that the figures will be greatly increased. A supplementary telegram to the Food Administration on April 2 said:

"Jefferson county today turned over thirty cars of flour. Ft. Smith reports flour to fill fifteen cars, with more being assured. Other cities to be heard from will give flour sufficient to total sixty cars or more. Counties throughout the state are agreed to use corn meal until next harvest. People all over the state are positively rejoicing at this opportunity to render service. This flour represents the unanimous cooperation of jobbers, retailers and consumers in Arkansas."

The merchants who received the returned flour are said to be co-operating heartily in re-purchases but in some instances were swamped with the great quantities being returned.

This concerted action on the part of consumers in Arkansas was solely in response to an appeal from the Food Administration, based on the growing need for wheat in Europe. In the appeal, the Food Administration said that city people having more than 24 pounds or country people having more than 48 pounds of wheat flour would be unpatriotic and would hinder America's prosecution of the war. The two and a half million pounds were returned within two weeks after this announcement had been made. The Administration is arranging with the Wheat Export Company, the purchasers for the Allies, to take over the entire results of this Arkansas drive for immediate shipment to Europe.

Ohio Won't Eat Any.

Total abstainers' clubs, the members of which pledge themselves to refrain from the use of wheat absolutely, are being organized in Ohio.

The movement started in Mt. Gilead, Morrow County, following a meeting at which the pressing need of wheat for shipment to Europe was set forth. Those at the meeting at once declared that, since the only wheat that can be shipped up to the next harvest is that which Americans save out of their normal consumption, they would pledge themselves not to eat any at all. Several of these total abstainers' clubs have already been organized, and the movement is spreading.

Grimes County's Bit.

No wheat flour will be used by the citizens of Grimes County, Texas, until after the next harvest, according to a telegram received by the U. S. Food Administration. These patriots have already turned over to the Government at cost, one car of wheat flour and will deliver others now in transit. These cars are being diverted to an Atlantic port by the Wheat Export Company and the Food Administration for immediate shipment to the Allies. In appreciation of this splendid act on the part of these Texas citizens the following telegram was sent them:

"We compliment the citizens of Grimes County upon their patriotism, and every pound of wheat flour they conserve will go to our Associates in the War.

(Signed) "HOOVER."

Armour's



New Brands of Oleomargarine



Veribest and *Nut-ola* are made in the new Armour oleomargarine factory—the finest and most sanitary food plant in the World. Both are produced under Government regulations.

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Selected fat from Government inspected beef and pork.
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Salt.

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Oil from the white meat of the cocoanut.
Refined peanut oil.
Rich pasteurized milk.
Salt.

ARMOUR AND COMPANY
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Meatless Days Suspended for a Month.

I am asking the State Administrators to suspend the meatless days for the next thirty days.

The very much over-normal run to markets of hogs due to supplies dammed back, during the winter months' car shortage, still continues and seems likely to go on for another thirty days. After this period the seasonal shortage in marketing will set in.

It is a matter of regret that the extent of our domestic storage capacity, the limited overseas and inland transportation and port facilities do not permit of saving and moving the whole of this temporary and abnormal surplus to the Allies for use when this heavy killing season has passed. On the other hand, the larger and cheaper supplies of potatoes and the larger supplies of milk, together with these further relaxed restrictions on meat so that some portion is available each day should facilitate the enlarged saving of bread-stuffs of which we are so much deficient in Allied needs.

I am confident that this holiday will not be taken advantage of by the producers to ask more than a fair price and fair profit, and that the packers and retailers will have sense enough to realize that this is not to be a holiday of high prices.

Nor should the consumer take this announcement as in any way a departure from the general principles of conservation of all foods which the Food Administration preaches. The need of food on the other side is greater than ever—the need of economy in America greater than ever.

HEBERT HOOVER.

Farmers and Live-stock Men Organize to Act as an Advisory Committee.

The Advisory Committee of 24 citizens representing agricultural and live-stock interests in various sections of the United States, recently appointed by the Secretary of Agriculture and the Food Administrator, organized in Washington March 28. Ex-Gov. Henry C. Stuart, of Virginia, had previously been requested by Secretary Houston and Mr. Hoover to act as chairman.

The committee immediately began a series of conferences with Secretary Houston, Food Administrator Hoover, and representatives of the various branches of these two agencies. The members, after leaving Washington, will be expected to keep the two departments in touch with local conditions and will reassemble on call.

The committee, it is expected, can render important service to the Government, especially in two ways: first, coming as they do fresh from the various sections of the Union, they can assist the government agencies in keeping more intimately in touch with production and food problems throughout the nation and can make suggestions as to modifications or extensions of existing activities; and second, can ascertain definitely and make clear to the persons interested in their respective districts the nature and scope of the policies of these two government agencies and the reasons underlying the various actions deemed necessary.

Secretary Houston, in outlining the purposes of the advisory group, said, in part:

"It seemed advisable to select a representative group of

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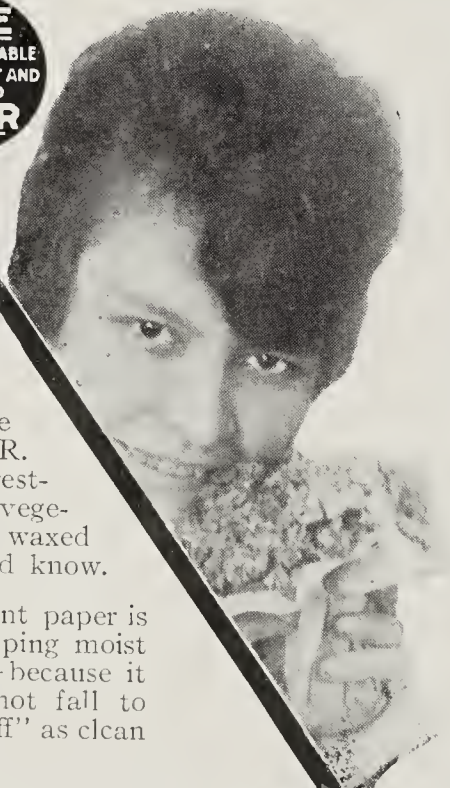
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producers who could come to Washington from time to time and furnish advice. The committee is to be an advisory, and not an executive, body. It can render much assistance in ascertaining clearly and definitely the purposes and activities of the Government and in clearing up confusions that exist in many parts of the country. It is difficult enough to run a Government like ours if all the facts are adequately presented to the people and properly interpreted. It is extremely difficult to run the Government satisfactorily if the people get, not facts, but gossip—and they are getting a great deal of gossip. In the field of production I am especially anxious to have you clearly understand what the Department is doing to aid in dealing with the seed and farm-labor situations and to have from you any advice as to what further things we can do to meet any difficulties in these two directions. The executive machinery of the Department is available for securing and supplying requisite information, and I shall be glad to have those in charge of the activities fully present matters to you.”

Food Administrator Hoover, after discussing problems relating to the Food Administration's functions regarding price fixing and control and distribution of products, said, in part:

“All war is an economic degeneration, and in getting down first from one stage of degeneration to another it is our business in our particular line to adjust the movement downward as softly as we can. We are not trying to correct industry or otherwise to lay any permanent foundations, but merely to serve the exigencies of the situation. The incidents of war on the food industries as a whole are probably more disturbing than on any other type of industry. There are the enormous demand for increased foods and the dislocation of shipping, and a thousand and one things that have happened and for which we must find some immediate solution—something that will do for the moment. Therefore, our aspect and our dealings are nine times out of ten the choice of the lesser evils, and that conception of the work is the thing that is so little understood generally throughout our country.

“We need, above all things, a body of sane and stable men who will consider the choices that are forced upon the Government in various lines of activities and advise us practically which is the best and then to give reassurance to the country that the best choice has been made and to explain the reason why these things have been done. There is such a mass of misinformation that we find it utterly impossible to follow it. We are anxious to secure a background of stable men who, when they have agreed with us on a line of policy, will stand to it and assist us in securing the confidence that it is probably the only, or at least the most advisable, thing to do.”

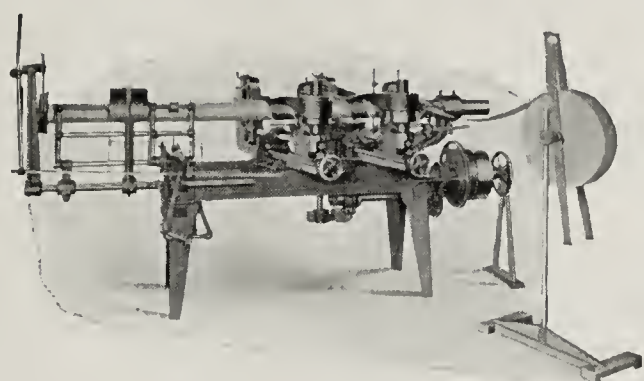
Further Economy in Preparing Meat for Sale Is Proposed.

A comprehensive program calling for further economy in the slaughter, dressing and sale of meat is being worked out by the Food Administration and by a committee of butchers and meat dealers appointed by the Food Administration, working in conjunction with the Bureau of Animal Husbandry and Office of Markets, Department of Agriculture.

Upon the findings of this committee, after further conference with the government departments, will be based a report to be furnished the trade by the Food Administration. It is expected that millions of pounds of meat products, now wasted or used for other purposes, will be made available for human consumption as a result of the committee's work. The committee is studying all phases of the meat slaughter, handling and distributing industries.

The committee consists of John E. Kotal, chairman, secretary of the United Master Butchers' Association of America, Chicago; J. P. Hetzler, meat butcher and dealer, Columbia, Mo.; Fred J. Sinclair, proprietor *Butchers' and Stock Growers' Journal*, San Francisco, Cal.; Roy Cohen, president National Market Co., Orange, N. J.; J. A. Whitfield, president Old Dutch Market Co., Washington, D. C.; Jacob Mayers, president and treasurer *Butchers' Advocate*, New York

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City; M. R. Scott, meat butcher and dealer, Lynchburg, Va. Mr. Charles Grismer, national president United Master Butchers' Association, Brooklyn, N. Y., is attending the sessions.

New Food Administrator for Oklahoma.

C. B. Ames, of Oklahoma City, has been appointed Federal Food Administrator for Oklahoma. Mr. Ames succeeds Dr. Stratton D. Brooks, of Norman, Okla., who found it necessary, owing to the stress of his duties as President of the University of Oklahoma, to resign.

Mr. Ames is a lawyer, and is indorsed by Governor Williams and many citizens of the state. He is chairman of the Liberty loan committee for Oklahoma, and is recognized as one of Oklahoma's most active war workers.

Financial Report of the Food Administration.

The itemized accounts of the Food Administration filed with the Senate and House on March 30 show that the total disbursements out of the Congressional appropriation for the month of February are \$148,688.53 on account of the Food Administration. They also show that out of the \$50,000,000 invested by Uncle Sam in the Grain Corporation for the purchase and sale of wheat, flour, beans, etc., for the Allies and the Government, and others, were \$105,922.75 for general expenses, \$137,749.86 for storage and insurance. These expenses, however, are covered by the Grain Corporation on the small differential charged between purchase and sale, so that Uncle Sam loses nothing in this operation.

The total disbursements of the Food Administration since its foundation on August 10, 1917, to February 28th, has been, for salaries and expenses under the Congressional appropriation, \$659,624.16.

The total disbursements on the conservation campaign provided by the President out of Presidential funds show \$743,605.13 since the 10th of August, when the Food Act was passed, and \$294,108.15 prior to that date.

The total disbursements of the Food Administration outside of the \$50,000,000 invested in the Grain Corporation has, therefore, been \$1,697,337.41.

The above includes federal expenses of the 48 different state administrators, the District of Columbia, Alaska, Hawaii and Porto Rico, and some 3,000 city and county administrators.

The Food Administration has approximately 3,000 volunteers, giving the majority of their time to the work and approximately 2,340 paid officials. The expenditure, therefore, up to date, amounts to less than \$320 per person actively at work for the Food Administration.

No Salt Shortage.

The rumor that the United States some time ago was threatened with a famine in salt was baseless, according to a report on the technology of salt-making in the United States, just issued by the Bureau of Mines, Department of the Interior. W. C. Phalen, mineral technologist, the author of the bulletin, reviews the industry and draws certain conclusions from visits to the operating plants in the United States. One of these conclusions is that there is an excess of plant

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capacity as compared with domestic requirements.

Mr. Phalen says:

"The consensus of opinion seemed to be that much more salt was being produced than could be marketed, estimates of over production ranging from 25 to 50 per cent. The facts that large up-to-date plants were not working at full capacity, that others were working at half time or half capacity, and that others were either temporarily or permanently closed are significant to those planning to enter the salt business. These statements, of course, apply to the normal conditions which obtained before the war.

"The keenness of competition in the salt industry prevents tying up large stocks and cornering the market, which is further prevented by the great abundance of this natural commodity, its widespread distribution and the fact that its production is not restricted to a few manufacturers, but is in the hands of many independent producers. It follows, therefore, that a scarcity of salt in any part of the United States is due not to a possible shortage of the original supply of salt itself, but to other factors entering into the salt industry, such as shortage of labor, fuel and difficulties in transportation.

"The importance of the industry needs no comment. The domestic output in the United States in 1916 was nearly 6,400,000 short tons, and it is estimated that in 1917 it will be nearly 6,950,000 short tons. The industry is scattered over fourteen states, distributed from coast to coast and from the Great Lakes to the Gulf. The low value of the commodity has prevented its transportation to considerable distances, except where local prejudice has favored a certain brand. This competition has led to loss.

"The United States has produced in recent years very nearly all the salt it has consumed. The small importations, usually not more than two or three per cent of the total consumption, have come to the Atlantic seaboard. This illustrates how, in the case of a low-priced and abundant commodity, freight rates regulate distribution and competition, not only among domestic producers, but from foreign sources as well.

"The rapid deterioration of equipment is another item in the salt business which has received consideration in the report. The wear and tear on all salt-making machinery is heavy. If a plant is allowed to remain idle for any considerable length of time, it is well-nigh ruined. For this reason it may often be cheaper to make salt for a season without profit than to shut down. In figuring costs and basing selling prices on them, some producers have not provided for the rapid deterioration of plant, and this, together with over production, has caused losses among salt manufacturers during the past decade."

Blackstrap Molasses Price to Be Restricted.

The United States Food Administration, after an investigation of the cost of manufacturing blackstrap molasses, has determined that any sale of imported blackstrap molasses or blackstrap molasses produced in the United States from imported sugar cane at a price of more than 18 cents a gallon will return the owner an unjust and unreasonable profit, and every such sale will be scrutinized carefully with the view to the revocation of the license of the offending seller.

Blackstrap molasses is a by-product of the manufacture of sugar, and is used in the manufacture of over 1,700,000 tons of feeding stuffs annually in the United States. The foregoing announcement will prevent profiteering in this essential commodity, and will insure a supply of this feed ingredient at a reasonable price.

The price of 18 cents refers to the price in tank cars at seaboard points, or at the point of origin carrying the same freight rate.

Food Administration Corrects Misunderstanding.

The Food Administration has announced:

Some misunderstanding on the part of tomato growers has resulted from a circular recently issued by the U. S. Food Administration conveying to tomato canners an announcement from the Army and the Navy. The import of this bulletin was that the Army

LEFFLER SPECIAL MACHINERY

Paper Can Machinery

Metal Package Machinery

Automatic Tin Can Machinery Soldering Machinery

Sanitary Can Machinery

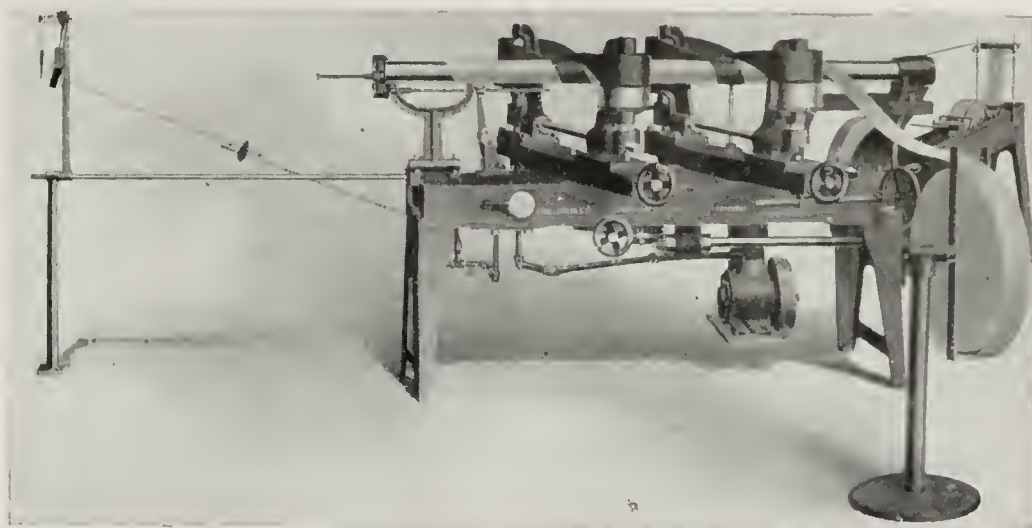
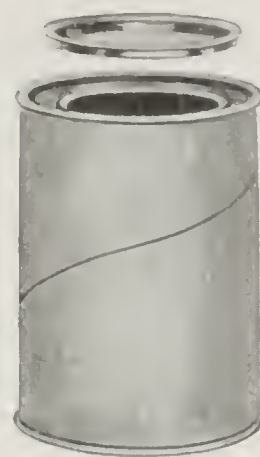
CATALOGUES ON REQUEST

Chas. Leffler & Co.

Clymer Street

Kent Avenue

BROOKLYN, N. Y.



and the Navy were ready to receive tenders from canners for canned tomatoes, based on stated prices per ton for raw tomatoes. No canner was required to bid and no limitation was made on the price per ton which any one might ask for his tomatoes, but the announcement was simply that if the canners wished they might make an offer to the Army and the Navy on the basis mentioned.

The Food Administration has no power and no desire to fix the price of tomatoes.

Instructions Regarding Storage of Flours and Meals.

If not properly cared for, hot weather frequently produces spoilage in certain flours and meals, especially those which contain a high percentage of fats, moisture or the outer coatings of the grain. To prevent such losses, particularly at this time when bread stuffs are so essential to ourselves and the Allies, the following instructions for the storing of these flours and meals are given by the Baking Division of the Food Administration:

Flours and meals should be stored in cool, dry, well-ventilated places; warehouses should be whitewashed and swept clean before these products are placed therein; large supplies should not be accumulated. If too large a stock is on hand, it should be reduced and the flours and meals in question should be consumed as soon as possible.

Flours and meals which contain the outer bran coatings and germ of the grain will not keep so well as when these are removed. Whole-wheat flour sterilized in the process of manufacture will keep much longer than the ordinary whole-wheat product. Corn meal and corn flour made from kiln-dried corn, and which have the germ removed, will keep better than the same products made from corn which has not been so dried and degerminated.

Special care should be taken of the following products and these should be kept moving or be used as soon as practicable and should not be allowed to accumulate in the warehouse—bran, shorts, and middlings, corn products containing the outer coating and germ, such as so-called water-ground corn meal and grits, etc., oats and oat meals, graham and whole-wheat flours, rye flour, barley flour, peanut meal, soya bean meal.

Care should also be taken of potatoes as they will rot and begin to sprout in warm weather. If the potatoes begin to sprout, it is well to go over them and remove the sprouts, which may easily be done by rubbing, the clean potatoes being transferred into new containers, or by shoveling them over inclines made of three-quarter inch wire screening. This should have sufficient pitch to permit the potatoes to roll into another bin. At the same time, any potatoes which have rotted may be removed.

To prevent flours and meals becoming infested with weevils the outside of bags containing them should be kept clean and swept often. All sweepings from warehouses should be collected and removed or burned as these contain most of the adult insects, larva and eggs. Sacks containing flours should be kept in good repair as this will prevent the insects from entering the bags. Weevils and other insects will not push their way through even the thinnest cotton bagging.

Care should be taken in storing bags of flours and meals to have sufficient space between the tiers to allow abundant ventilation and to raise the bags sufficiently from the floor to exclude rats, mice, and insects; also to permit cleaning of the floors without the necessity of transferring the products from one part of the warehouse to another. Insecticides must not be used on products which are to be consumed for food except by experts trained in their use.

Glass Found in Food in But One Case Out of 200 Reported and Investigated.

The frequent and widespread publication of statements concerning the presence of ground glass in food-stuffs has led the Committee on Public Information

Food saving must begin with buying

THE Housewives of America are the army behind the army. They are trying to do the greatest work ever done in any war by women—to save food every day that our armies may be fed and our victories may be won.

The problem of the housewife is not simple. She can and does observe meatless and wheatless days, and she can and does cut down on the quantity of food used. She will not waste food.

But she is entitled to be protected against waste in buying; she is entitled to organized co-operation that will supply her home with food products which will make real saving possible.

Our institution is organized today to give the housewife just that help. Every Wilson food product is selected, handled and prepared with the respect due that which is to be served in your home. It is satisfactory and economical.

More than that, we can give you personal advice and suggestions—tell you how to buy economically, how to cook economically—how to save in the kitchen and on your table.

Write me and ask for the information you wish. There is nothing more important in our service to our country than to help you in the service you give it in your home. Our Institution is the Intelligence Department of the Army Behind the Army, and our facilities are cheerfully and willingly at your command.

John E. Wilson
President, Wilson & Co.

"The Wilson Label



Protects Your Table"

BUY WARD'S FOOD CONSERVATION VICTORY BREADS

CAPITOL CORN OATEN-LOAF
DEFENDER BRAN ROMANY RYE
WHEATHEART

True wheat saving loaves, palatable and nutritious. Ward experience, skill and scientific baking methods guarantee their quality.

WARD BAKING COMPANY

BAKERIES IN

New York	Newark	Providence	Cleveland
Brooklyn	Boston	Pittsburgh	Chicago

to inquire into the authenticity of these reports. It has been advised by the Food Administration that thorough investigations of more than 200 of the cases has disclosed only one instance in which ground glass was found in the foodstuffs inspected.

The case in which glass was found occurred at Fort Smith, Ark. A baker in that town had had trouble with his employes, one of whom, desiring to destroy his employer's business, had filled with glass a loaf of bread which was to be delivered to an orphanage. When the bread was served to the inmates of the institution several of them suffered lacerations of their lips. No more serious injuries resulted. The case was given premature publicity, the baker being accused of being a German agent, with the result that he had to retire from business.

Maj. James Miles, head of that bureau of the Food Administration which has directed the investigations, has personally conducted 10 inquiries in and within the vicinity of the District of Columbia, and at his behest the Secret Service has made the other investigations reported to the Food Administration. Other intelligence services of the Federal Government have also made numerous investigations of reports that were brought in the first instance to their attention. These latter inquiries have proved the reports to be practically as groundless as those investigated by the Food Administration. In a few cases glass and other foreign substances were found in the coarser foodstuffs, but the presence of these foreign substances was patently attributed to careless milling rather than to design.

Replying to a letter relating to one of the most recent cases reported to the Food Administration, Maj. Miles wrote the following letter:

April 3, 1918,

Mr. A. E. Vinson,
University of Arizona,
Tucson, Ariz.

Dear Sir: Your letter of March 28 addressed to Mr. Hoover has been referred to me. I desire to thank you very much for the information contained therein.

We have followed the elusive ground-glass story from Maine to California and from the Lakes to the Gulf for the past four months. War Intelligence, Navy Intelligence, and the Department of Justice are doing the same, and in the thousands of cases that have been reported we have found but one genuine case of deliberate intent in putting ground glass in food. This case was where a disgruntled employee of a bakery in Fort Smith, Ark., placed glass in one loaf of bread. This was done for the purpose of injuring the business of the baker, and succeeded so well that the baker is out of business, due to untimely publicity.

Yours very truly,

U. S. FOOD ADMINISTRATION.

The Food Administration has endeavored to impress upon the public and the press of the country the evil results of premature publicity given to reports of the presence of glass in food. Publication of the reports before opportunity is afforded for investigation serves to create a condition of hysteria in households and does irreparable damage to the food producers and handlers whose products are attacked.

BUNTE Dutch Process COCOA

Carefully selected Cocoa Beans manufactured into cocoa by the Bunte Dutch Process make Bunte's the utmost in Cocoa goodness.

BUNTE BROTHERS Established 1876 CHICAGO, ILL.

What You, Mr. Dealer, Must Appreciate About Coca- Cola's Restricted Output

The reason why you do not get your full supply of Coca-Cola will appeal to your patriotism. To save materials for war use, Coca-Cola's output is restricted by the Government. The Coca-Cola Company is proud to do its full part in conservation, and at the same time is endeavoring to help the Government in preserving industry.

Please recognize that we are making every effort to supply you with the utmost quantity in strict accordance with official regulations. Please appreciate that your difficulties are ours — and ours are multiplied by the number of our friends and dealers throughout the country, whose business it is our object to strengthen and maintain.

It is important for you to realize that every ounce of Coca-Cola we are manufacturing and distributing to you, every glass you sell over your counter, is in effect legalized—allowed and authorized by Mr. Hoover and the Food Administration after full compliance with their purposes. Coca-Cola represents a product that loyal dealers may be proud to offer.

Order from your regular jobber and we will go the limit to meet your demands and at the same time meet the requirements of our Government and yours.

When *authorized* Coca-Cola is called for, give your customer the genuine. If you are out of Coca-Cola for the minute, don't offer an imitation which has not loyally done its part in conservation, but which is trying to take advantage of our restricted output to pass itself off as a substitute.

To stand by loyal business, defend honest products, and protect the public against deception—these are not only duties of patriotism, fair play and conscience, but they are character-principles of good business, and the only principles that pay in the long run.

THE COCA-COLA COMPANY
ATLANTA, GA.

THE COLUMBUS LABORATORIES**31 N. State Street****CHICAGO, ILL.****DEPARTMENTS: Food, Commercial, Medical, Milling and Baking.**
Expert Staff of Consultants. Court and Medico-Legal Work.**The Fraser Laboratories****Analytical Department, Fraser & Co.****50 East 41st St. (Chemists Building), NEW YORK, N. Y.****Analyses of Foods, Drugs, Water and Industrial Products,**
Chemical and Bacteriological Examinations.
Investigations to Improve Processes. Sanitary Surveys.**Joseph A. Deghuée, Ph. D.**
Harry E. Bramley**Herbert D. Pease, M. D.**
Frederic D. Bell**LEDERLE LABORATORIES****39-41 West 38th Street, New York City****Sanitary, Chemical and Bacteriological Investigations. Examinations**
of Foods, Drugs, Water and Disinfectants.**GLENN H. PICKARD****Chemical Engineer****111 W. Monroe St.****Chicago, Ill.****Consultant in the Design and Operation of Plants for**
the Manufacture, Refining and Use of Vegetable Oils.**The Sanitation and Hygiene Institute****7 East 42nd Street, New York City****Specialists in Food Regulations and Standards. In-**
vestigations to improve Processes. Laboratory
Examinations and Sanitary Surveys.**Russell Raynor****Benjamin Jurist****SOMETHING NEW**
SAMPLES GRATIS**GRANULATED BORIC ACID****Will dissolve more readily than any form hitherto**
introduced. When ordering, specify**20 MULE TEAM GRANULATED BORIC ACID**
U. S. P.**PACIFIC COAST BORAX COMPANY****New York****Chicago****Oakland****DR. PRICE'S VANILLA****Is Made From the****Finest Mexican Vanilla Beans****The same high quality is found in Price's****Lemon, Orange, Raspberry and Strawberry****PURE FRUIT EXTRACTS****Price Flavoring Extract Co.****CHICAGO, ILL.****Expert Advice for Millers in Conversion of Machinery.**

The United States Food Administration has established a mechanical department in connection with its Milling Division for the purpose of assisting millers along technical lines in converting or setting up mills for grinding barley, rye, and corn. This is to assist in the movement for wheat saving in the United States through the increased consumption of other cereals.

J. H. Hammill, vice-president and treasurer of the Strong-Scott Manufacturing Co., of Minneapolis, has joined the Food Administration as manager of the new department. He will take care of all inquiries from millers who wish to convert their wheat-milling equipment to the handling of substitute cereals and will also assist them in regard to milling a larger percentage of the wheat grains into flour.

The Mechanical Division will be prepared to furnish milling diagrams for wheat, rye, or barley, and to show such changes as will be required to convert a wheat mill to the manufacture of either rye or barley flour.

Millers are encouraged to correspond with Mr. Hammill at 74 Broadway, New York, where he will have his office with the Food Administration Milling Division, and to submit to him any technical problems. A circular will be forwarded to all mills in the United States, specifying clearly the information concerning their present equipment which Mr. Hammill must have in order to assist them intelligently.

Cornmeal from the South by Steamer to New York.

In a typical American fashion, one of the largest milling and distributing firms in New York is solving the difficult problem of food transportation. Following the President's proclamation of January 27, urging the use of other cereals in place of flour, this firm placed an order in the South for 40,000 barrels of cornmeal. Instead of having this shipped by rail, it was requested that the cargo be placed upon a coast-wise steamer, and the cornmeal is now on its way to New York.

This firm, which is loyally supporting the Food Administration, comes forth with the suggestion that firms in cities north of the Mason-Dixon line and on the Atlantic seaboard can assist in relieving freight congestion by following similar plans. Rice flour and other products can now be shipped from New Orleans to New York by sea at a saving of approximately one-third of the freight charges, and the time consumed should not exceed five or six days.

Due to the freight congestion in the East, it is likely that shipments made by sea will reach their destination in the North Atlantic states in less time than would be required for shipments by rail. The Food Administration is ready to assist food merchants in making this means of transportation available.

Laboratory for Testing War-Time Recipes.

An experimental laboratory has been established in which representatives of the Food Administration will co-operate with those of the Department of Agriculture in standardizing war-time recipes and putting them out in the form in which they will be most useful. A small building near the Department of Agriculture will house the new "kitchen." Recipes from all over the country will be tried and their nutritive values thoroughly tested. The work is in line with the laboratory work which the Department of Agriculture has been doing in testing the nutritive value of foods. Representatives of the Food Administration are: Miss Elizabeth C. Sprague, Miss Harriet Edgworth and Miss Ethel Loflin. Those of the Department of Agriculture are: Miss Jean Mackinnon, Miss Foster, and Mrs. Fannie Yeatman.

OUR BOYS IN KHAKI

are being supplied with

DRYVENTOR DEHYDRATED FOOD PRODUCTS

Because our Government knows the remarkable accomplishments of dehydration by the Dryventor System. A product equal or superior to the fresh fruit or vegetable, from which it is made, rendered imperishable by the removal of its free water content, reduced, in bulk from 40 to 60%, and in weight from 60 to 90%.

The Dryventor preserves perishable fruits and vegetables indefinitely, secures the grower, the merchant and the consumer, against loss by decay, and reduces the costs of transportation and marketing.

The Dryventor is the only automatic system of dehydration—developed during ten years of constant experimentation in plants built for actual commercial production.

A two compartment Dryventor, with its complement of conveying and preparation machinery, is in daily operation at our Food Laboratory in Chicago.

We are designing and building complete

DRYVENTOR PLANTS

In the shortest time consistent with thoroughness

BULLETIN UPON REQUEST

DRYING SYSTEMS, Inc.

322 Michigan Avenue

Chicago, Ill.

BON BON*The Original Alum Baking Powder*

Never surpassed in wholesomeness, leavening or keeping qualities. Immense output. Low price.

J. C. Grant Chemical Co., E. St. Louis, Ill.

Illinois Vinegar Mfg. Company

19th AND ROCKWELL STREETS

CHICAGO, ILL.

MANUFACTURERS OF HIGH GRADE
DISTILLED VINEGAR**Canned Salmon**

ALL GRADES ALL SIZES

Largest Distributors
in the World**KELLEY-CLARKE CO.**

NEW YORK CITY

SEATTLE, WASH.

**Did You Like This Copy of
The American Food Journal?**

If so, and you are not already a subscriber, send the publisher your check for \$1.50 and join the rapidly increasing ranks of those who believe in "good, wholesome food and lots of it."

The American Food Journal

15 South Market Street, Chicago

Garbage-Utilization Bulletin.

A 20-page bulletin on "Garbage Utilization," with particular reference to utilization by feeding, has been prepared by the Garbage Division of the Food Administration, and is available in printed form. The purpose of the Garbage Utilization Division is to urge saving of such waste food products as are unsuited for human consumption to increase the meat supply, and the production of edible fats and fertilizer materials. Twenty odd billion pounds of garbage are produced in this country yearly and the garbage pail is one of our most expensive luxuries. "Put less garbage in the pail and take more out" is the conservation idea, and in this bulletin a sufficient description is given of different methods of collection, and utilization both by reduction and feeding to hogs, with emphasis upon the latter method as being adapted to the needs of hundreds of communities which lack modern reduction plants, and may use feeding as an immediate conservation measure for war purposes pending the installation of a reduction plant.

Bread Without Sugar.

A method of making bread without either sugar or malt has been worked out by the Ismert-Hincke Milling Co., of Kansas City, and is presented to the public for the good of the baking industry. This process uses germ middlings, which are ordinarily sold for live-stock food. Seven pounds of germ middlings are weighed out for use with 100 pounds of flour, placed in a vessel, and scalded with water. After it has stood for a short time the residuum is strained out, and the water used in making up the dough, adding as much more water as is necessary. Sponge made in this way without the use of either sugar or malt shows an increased expansion with a loaf of fine texture and exceptional flavor, a trifle whiter than when sugar is used in baking. The process has been perfected in the milling company's laboratory, and is now being applied commercially by the Campbell Bakery, of Kansas City. Another process consists in taking 5 per cent of the flour to be used in the bread batch and letting it stand in five times its volume of water, for several hours, at a uniform temperature of 150°. This makes sugar unnecessary, but does not dispense with the desirability of using malt.

Compact Meat Shipments.

Space on the refrigerator ships carrying mutton and beef from Australia to England is now so valuable, according to *The Meat Trade*, that careful study has been made of shipping methods which will increase the tonnage that can be carried in a given area, and with such success that gains of 33 per cent are reported. Frozen mutton, for instance, is placed in refrigerators and chilled for 24 hours; then the carcass is cut in two pieces across the loin, the trunk falling to the floor and remaining in an upright position. The hind portion is then put sideways, legs down, into the trunk, and frozen in the upright position. Mutton treated in this way makes it possible to ship 26 per cent more weight in given space than where whole carcasses are loaded. Beef carcasses are treated by removing the shank bone at the stifle joint with meat adhering. The shank is then boned and the boneless meat obtained therefrom is placed in the flank and sewn to the carcass. Another method is to bone the shank out from the stifle without cutting the meat from the quarter and sewing the meat up into the space left by the removed bone. Further economies in shipping space are secured by freezing boneless meat and beef sundries in molds of uniform size after chilling. Such methods might be adapted to our railroad shipments of meat.

THE AMERICAN FOOD JOURNAL



—with which was combined on May 15, 1918—

THE FOOD LAW BULLETIN

With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

ROBERT GORDON GOULD, *Editor*

Vol. XIII

MAY, 1918.

No. 5.

The Food Law Bulletin Merged.

With this issue *The Food Law Bulletin* becomes a part of this JOURNAL. About a year ago the publishers of THE AMERICAN FOOD JOURNAL bought *The Food Law Bulletin*, at that time being undecided whether to continue publishing the *Bulletin* as a separate periodical or to merge it with the JOURNAL. Several months of careful examination of the field has convinced them that there is no good reason why the subject matter of both cannot be combined in one periodical. Therefore, from this time forth the subscribers to *The Food Law Bulletin* will receive THE AMERICAN FOOD JOURNAL (the remainder of their \$5 subscription being applied to the JOURNAL at the present rate of \$1.50 for the JOURNAL) and the readers of the JOURNAL will receive an enlarged magazine—one containing the salient features of both periodicals.

On the first of June the subscription rate for THE AMERICAN FOOD JOURNAL will be advanced from \$1.50 to \$2.50, which is considered moderate in view of the constantly increasing cost of periodical publishing. It is very likely that before the first of the year a further advance will be necessary.

Can You Pat Your Own Back? We Can.

It is not often that this JOURNAL indulges in the petty vice of self-congratulation. Occasionally, however, the impulse is irresistible. The publishing of letters attesting to the intrinsic worth of a magazine serves a two-fold purpose: it lets the readers know that there are others than themselves who enjoy reading it, and it caters in innocent fashion to the to-be-expected vanity of the publisher.

A few weeks ago Miss Margery M. Smith wrote us in the following well chosen words: "I am sorry that

I was misinformed as to the subscription price of your Journal. I am only too glad to enclose a check for the balance due on this year's subscription and for a year in advance. The FOOD JOURNAL is an excellent publication and I consider myself the loser for having made so late an acquaintance with it." Miss Smith is an instructor at Simmons College, Cambridge, Mass. She is one of the many—very many—dietitians on our subscription list.

Comes next a letter from Duluth, which substantially is: "It has been in my mind for some time to inquire as to the rate at which we could have THE AMERICAN FOOD JOURNAL mailed to our sales force of approximately 100. I wish to compliment the publishers of the JOURNAL and to say that I have found therein many interesting and valuable articles. These articles have given definite knowledge of certain goods and it is knowledge today that best equips every wholesale grocery salesman, because he in turn must educate the retailer." This scholarly appreciation of true worth bears the signature of Mr. R. A. Horr, the treasurer and general manager of the Stone-Ordean-Wells Company, wholesale grocers.

Having heard from the academicians and "the trade," let us listen to a representative of that hard-working army for whose benefit the JOURNAL was founded some 12 years ago—the official contingent. Last week's mail brought to our desk the following: "I have just finished reading the April issue of THE AMERICAN FOOD JOURNAL, and in addition to thanking you for giving so much space to stories concerning the work of this department, I want to assure you that every page of your magazine contains most interesting and instructive articles that are of vital interest to food control officials and those who are interested in

food control work." The signature is that of the Hon. John B. Newman, food commissioner of Illinois.

The gathering would not be complete without a report from the committee on ways and means. No periodical—not even the JOURNAL—could live overnight without advertising. It is, therefore, eminently proper that our little bunch of violets should include one of golden hue. This reads: "*I am glad to report to you that our advertisement in the March issue resulted in a large number of inquiries, several of which will, no doubt, result in sales of our machine. The result of our advertising in your paper has been indeed gratifying, and, in consequence, I have nothing but praise for THE AMERICAN FOOD JOURNAL.*" The machine in question is a new type of dessicator for milk, eggs, yeast and other vitalistic substances and is made by the G. A. Buhl Company of Chicago, Mr. Buhl having written the letter after casting up his account with us.

A journal which can of its own weight bring forth such letters from those who typify the four cornerstones upon which the food industry is built—dietetic and economic worth, efficient handling, sane legal control, and intelligent manufacture—certainly has cause for a degree of self-satisfaction.

Is Wheat Indispensable In our Diet?

A committee of experts was recently assembled by the Food Administration to consider the special physiological problems involved in the general problem of wheat conservation. This committee was composed of the following men:

Dr. R. H. Chittenden, professor of physiological chemistry and dean of Sheffield Scientific School at Yale; Dr. Graham Lusk, professor of physiology at Cornell University; Dr. E. V. McCollum, professor of bio-chemistry at Johns Hopkins University; Dr. L. B. Mendel, professor of physiological chemistry at Yale; C. L. Alsberg, chief of the Bureau of Chemistry of the Department of Agriculture; Dr. F. C. Langworthy, chief of the home economics division of the State Extension Service, Department of Agriculture; Prof. Vernon Kellogg, of Stanford University; Dr. Alonzo E. Taylor, professor of physiological chemistry at the University of Pennsylvania; Dr. Raymond Pearl, of the School of Hygiene of Johns Hopkins University, and the U. S. Food Administration; and Dr. Ray Lyman Wilbur, formerly dean of the Stanford University Medical School and now president of the university. No group of higher physiological authority could be assembled in this country.

The question most seriously asked of this committee by the Food Administration was: To what extent can the wheat to which we are now accustomed in our diet be reduced without injury to the health of the individuals of the nation?

The answer was direct and unequivocal. "It is the scientific opinion of the committee that in a mixed diet wheat may be entirely replaced, without harm, by other available cereals, namely, rice, barley, oats, and corn. However, we should not recommend this except as an emergency measure."

The report then explains that the particular reason for not recommending this, apart from the fact that wheat is perhaps the most convenient cereal for use because of its special qualities connected with the making of bread in loaves that will stand up and remain sweet and palatable for several days, is that going without wheat would be a psychological, though not a

physiological, deprivation. We are accustomed as a nation, just as most of the nations of Europe are, to the use of wheat bread, and a sudden break in our custom would have for some people a psychological significance more or less disturbing.

However, if these people could well understand the emergency leading to the change, and then could recognize that they were aiding their country in the great emergency by making the change this psychological disturbance would be much reduced.

Exactly this condition of a great national emergency, for the meeting of which the loyal and patriotic efforts of all the people are needed, is the condition today. It is only because of this great national emergency that the Food Administration makes use of this deliberate judgment of the physiological experts called in for advice.

Even under these circumstances it is recognized that because of economic and commercial reasons not all of the people of the country can go without bread based on wheat, but it is certain that a great many people in this country can easily do this, and it is the belief of the Food Administration that most of the people in this country who can dispense entirely with wheat from now until the next harvest will be glad to do it for the sake of maintaining the wheat-bread supply for the armies and civilians of our fighting associates in Europe as well as our own soldiers in France.

Perishable Foods and Government Railroad Control.

Those who ship perishable foods by rail are commencing to exhibit signs of uneasiness as to just what government operation of the railroads of this country has in store for them. In the old days, it has been the custom to ship lettuce, eggs and other perishable foods by fast freight which amounted almost to express service, the rate charged by the railroad companies being considered by all concerned to cover special care in handling while in transit as well as extremely rapid schedules. It now appears that the Government has shown signs of being unwilling to continue this former state of affairs. Not only is the right of the shipper to select a certain railroad for certain types of service to be questioned, but there are indications that the Government does not entirely agree with the assumption that the rate charged for certain perishables covers unusual service of any sort. If such proves to be the case, the shippers, undoubtedly, will be forced to insure the goods in question, as the percentages of loss possible by virtue of indifference on the part of the carrier are too great to be borne by any individual. It would seem to this JOURNAL that the better course would be for the Government to take counsel with the shippers and continue the *status quo*.

The Medicinal Value of Corn Gruel.

One of the hopeful aspects of the present food situation is that many a periodical of general interest is for the first time in its existence taking an active interest in dietetics. Most of the advice offered is, in the main, reasonably accurate. Occasionally, however, our confreres slip a cog. Thus we have *The Pennsylvania Farmer* with a page in its April 13th issue devoted to various types of food among which is a dissertation on cereals coming from no less an authority than Charles H. Darlington of Chester County, Pa. Mr. Darlington, among other sage reflections, states that "*At the time of the great Irish famine, half a century ago, charitable Americans sent a shipload of corn to the sufferers. They knew nothing about it, more than we*

do here, now, and they made gruel of it and fed their starving babies. Countless died in consequence, of bowel complaints. Since then, the Irishman has no use for "the yally male." Corn gruel is a medicine, a purgative, hardly a food. Mush is of the same sort, less so. Bake your cereals."

Corn gruel, as every one knows, is made from corn meal, the fiber content of which is practically nil. There is, and can be, no mechanical activity of peristaltic action due to the use of corn in this form. Nor does corn contain any of the vegetable poisons, such as render castor oil, for instance, such a fine eliminant. In fact, there is absolutely no ground whatever for Mr. Darlington's statement, and a definite statement breathing forth such utter ignorance, published in a paper having the circulation enjoyed by *The Pennsylvania Farmer*, is likely to do considerable harm to the cause of a highly estimable cereal. We hope that before Mr. Darlington writes further upon the subject of food he will post himself a bit more thoroughly.

Salvaging Fire-Damaged Foods.

The attention of this office has been recently called to an economic wastage which surely should not be difficult to overcome. In the case of foodstuffs damaged by fire, but not rendered absolutely worthless, it seems to be the custom for the fire insurance companies, after settling with the original owner, to go about the matter of salvage in most amateurish fashion. Not long ago, a large amount of sweetened milk chocolate somewhat damaged by fire was so unintelligently handled immediately following the fire that fermentation set in and the whole lot was a total loss. In another case, a large amount of grain, which immediately following the fire in which it was water-soaked could, by prompt and intelligent action on the spot, have been rendered available for feedstuff, was instead shipped a long distance by slow freight and then found to be worthless. In these days of scarcity of foods and feeds it behooves us to exercise more thought than the foregoing episodes seem to indicate.

U. S. Food Administration on Milk.

At the conference of the national dairy industry held in Chicago April 12 and 13 a committee was appointed to confer with the Food Administration officials in Washington. This committee has requested the Food Administration to announce again its policy with regard to milk.

In response to this request the Food Administration has issued the following:

"For the proper nourishment of the child it is essential that milk should be kept in the diet as long as possible. Not only does it contain all the essential food elements in the most available form for ready digestion, but the recent scientific discoveries show it to be especially rich in certain peculiar properties that alone render growth possible. This essential quality makes it also of special value in the sick room. In hospitals it has also been shown that the wounded recover more rapidly when they have milk.

"For the purpose of stimulating growth, and especially in children, butter fat has no substitute. During this last winter, when much agitation arose in some of the larger cities over the price of milk, which was advanced from 2 to 3 cents per quart by reason of the rapid rise in the cost of feed and labor, many families among the poorer classes were found giving their children tea and coffee instead of milk. Such methods of

feeding fail to nourish the child properly. The widest possible publicity should be carried on through public channels to bring these essential facts to the attention of all mothers.

"In spite of the shortage of milk in Germany, that country has at all hazards maintained the milk ration of the children and in the hospitals, even though to do so has meant that the adult population has had to forego largely its use. In a "safety first" health campaign it must be remembered that it should be "children first."



Use More Corn.

This poster is a recent production of the U. S. Food Administration. For multiplicity of uses there is, admittedly, no cereal to compare with corn.

How Our Army's Food Is Inspected.

The Quartermaster Corps, which is charged with the responsibility of feeding and clothing the soldiers, is rigidly inspecting the food purchased for our fighting forces, so as to see that only pure articles are supplied.

As an indication of the amount of food that must be obtained, a force of 1,500,000 men consumes daily 1,500,000 pounds of beef, 225,000 pounds of bacon, 210,000 pounds of ham, 135,000 cans of tomatoes, 225,000 cans of jam, 3,000 bottles of tomato catsup, etc., aggregating no less than 6,750,000 pounds of foodstuffs.

These enormous quantities of foodstuffs are subjected to thorough inspections, which begin at the

source and continue until the food is actually consumed. Every possible safeguard is employed in this inspection, which is directed by the Inspection Branch of the Subsistence Division of the Quartermaster Corps, with headquarters in Washington. The ramifications of the inspection service are desired to leave no doubt that all the supplies purchased for the Army are carefully scrutinized.

Each depot of the Quartermaster Corps is a central subsistence business of its own, supplying the camps, cantonments, aviation fields, and other posts in its territory. The subsistence officers here are held responsible for the quality of the goods they receive.

Before the supplies ever reach the depots, however, they have been passed upon by expert inspectors in the packing houses, in the canneries, and in other sources of origin. The records at Washington show the capabilities, character, and standard of every establishment purveying food to the Army. The inspectors know fruits, vegetables, meat, and the other articles of purchase. The Army specifications are clear and exact. The inspectors make sure they are met, and the receiving officers at the depots, assuring themselves that there has been no deterioration in shipment, thus make their contributions to that continual inspection which ceases only when the food has ceased to exist.

The Bureau of Markets of the Department of Agriculture, with representatives throughout the country whose duty is to report on conditions in the perishable food markets, gives help to the Army inspection. The Bureau of Chemistry, of the same department, also lends its assistance, examining and analyzing all the foods which come into question.

Samples are drawn from shipments, the analysis made, and the result placed on file with the inspection branch's central office. Any discrepancy between the original sample and delivery brings prompt action.

The inspection branch maintains a current file of unreliable dealers and unreliable products. This insures the complete elimination of dealers who, having been denied the right to supply some of the many depots of the Army, make subsequent attempts to obtain contracts at another point. It is pleasant to state that there are not many of these. As a rule the American food manufacturer is soundly patriotic. He has no intention or desire to deliver food not up to the standard. The watchfulness of the inspection branch in this respect is required as a safeguard against inefficiency or error rather than against deliberate evasion and deceit.

New Federal Wheat Grades.

The new federal grades for wheat and corn promulgated April 13 and to become effective July 15 differ widely from the tentative grades published last month.

For spring wheats the moisture content ranges from 14 to 16 per cent and for winter wheats from 13.5 to 15.5 per cent. The minimum test weight requirements are reduced except for a few grades. The amounts of damaged wheat, smut, and wheat of other classes permissible, has been increased in some grades. The subclasses, Red Spring, Humpback and Soft Red have been eliminated from the standards and grades for garlicky wheat added for all classes.

British Army Almost Feeds Itself.

Not many people in England know to how great an extent the army, whether at home or in the field overseas, is growing its own food, says *The London*

Times. It is common knowledge that many months ago, rather as a pastime than as part of a considered policy, the soldiers in the training camps in the United Kingdom and those in reserve or at rest behind the lines in France and Flanders spent much of their spare time in converting small plots of land here and there into vegetable gardens for the production of "extras" to supplement and vary the ordinary diet.

Out of these gardens has developed an extensive scheme for the use of as much as possible of the vacant land in the camp areas and behind the various fronts for the growth of food and fodder for the army, with the object of economizing transport and reducing the demands of the army on the diminishing food supplies of the world. A year ago an army order was issued in France telling the troops that food growing was second in importance only to fighting. Vast strides have been made in the military cultivation of land since then, and during the last three months a considerable impetus has been given to the movement owing to the encouragement, active assistance, and guidance supplied by the Army Agricultural Committee appointed last January under the chairmanship of Lord Harcourt.

Every military camp in the United Kingdom, every German prisoners' camp, and every aerodrome has been brought within the area of military agricultural operations. In addition, 50,000 acres are being cultivated behind the lines in France, 7,000 acres at Salonika, approximately 700,000 acres in Mesopotamia, and large areas in Egypt, Palestine and Cyprus. In France the army has its own Directorate of Agricultural Production, with Brigadier General Lord Radnor as Director, working for the cultivation of derelict land in conjunction with the French authorities. With the help of the Food Production Department at home, 150 tractors and plows, and large quantities of seed and seed potatoes, have been supplied.

At Salonika the crops now growing comprise 2,100 acres of barley, 500 acres of wheat, 700 acres of potatoes, 2,000 acres of maize and 1,700 acres of other crops. It is estimated also that the work there, which is under the control of Capt. A. Ogilvie as Deputy Assistant Director of Agricultural Production, will result in a saving of 20,000 tons in the quantity of hay required to be imported.

In Mesopotamia, where irrigation is the main problem, a directorate of irrigation has been set up in addition to a directorate of local resources. Small irrigating pumps, driven either by steam or by oil, are being used on the banks of the Tigris, and encouraging progress has been made in restoring and utilizing the fertility of what was once the garden of the world. It is anticipated that the yield this year will be 25,000 tons of wheat and 100,000 tons of barley, in addition to fair crops of other grain. Tractors, threshers and hand implements of several kinds have been sent from India and Australia as well as from this country.

In Egypt, Palestine and Salonika the British armies will this year be self-supporting in vegetables, including potatoes, and there will also be a large production of hay and other forage material for horses. Last year the army in Egypt produced for itself 196,000 tons of hay; this year it is estimated that 424,000 tons will be produced. Last year's yield of barley was 26,000 tons; this year it will be 96,000 tons. Last year a portion of the army's sugar supply was imported; this year the whole requirements both for Egypt and for Salonika will be produced in Egypt.

The Cylindrical Carton

By ROY E. CAMPBELL,

Scientific Assistant, Truck Crop and Stored Product Insect Investigations,
Bureau of Entomology, U. S. Department of Agriculture.

DURING recent years packers of cereal products, dried fruits, macaroni, and similar foods have come to realize the importance of putting up their products in tightly-sealed packages, because these are more sanitary, protect the contents, and preserve them for a longer time in their proper condition. The package, being air-tight, prevents changes in the contents from atmospheric conditions, likewise infestation by insects, and the resulting loss. This loss, which is great in the actual value of the products infested and rendered practically worthless, becomes of added importance through injury to the reputation of the packer. If, on purchasing a package of foodstuffs, it is found to be infested, the consumer is likely to come to the conclusion that all products of that manufacturer may be infested, or, as it is more often expressed, "buggy," and demand another brand, or else refrain entirely from the use of such products during the warmer periods of the year.

Other advantages of the sealed package are that it is strengthened by the application of the seal or label, and also improved in appearance, making it more attractive to the purchaser.

As this discussion concerns only the cartons themselves, it is presumed that the products are properly sterilized before packing, and that any possible infestation cannot come from inside the carton, but must be introduced from outside, after the carton has been packed.

Sealed Packages.

There are several types of sealed packages now in use. Most seals are applied to the outside of the carton itself, after the latter has been packed, being either a printed label pasted or glued tightly about a plain carton, or a waxed or paraffined paper sealed around a printed carton by means of heat. Cartons with an inner liner, or with the end flaps merely tucked in or glued down are not absolutely tightly sealed, and hence are neither air-tight nor insect-proof. Experience by packers as well as experiments detailed in previous publications of the Department of Agriculture,² has shown that these flaps cannot be folded, tucked or glued down perfectly tight in commercial practice, but that spaces or cracks enough are left along the edges of the flaps or at the corners, to permit the entrance of air or insects. The glued or pasted label, or the waxed paper seal, when properly applied, makes an hermetically sealed package, which is air, moisture, and insect proof.

Objections to the Ordinary Rectangular Carton.

There are several objections to the rectangular carton now most commonly used. It is subject to more or less breathing in handling, and this breathing may break open the seal. The sharp corners and edges are

particularly vulnerable, being, in fact, the weak points in this type of package. The loose seals, such as the waxed paper, are quite easily torn or broken, especially at the corners. Because of the shape of the package, the labels have to be folded over at the ends, and unless carefully applied, these folds may not be sealed perfectly tight. The principal objection is this: the consumer to open the package cuts along three edges at the top, or cuts the label on lines indicated, and opens the flap. (Illustrations 1 and 2 show cartons opened in this manner.) As this action permanently opens the package, and it can not be closed again, that part of the contents not used is now without protection from atmospheric conditions or from insects.³



1 2 3
Rectangular and Cylindrical Cartons.

It is the purpose of this paper to set forth a comparatively new type of carton for cereal products, dried fruits, and so forth, which not only answers the purpose of a perfectly sealed package, but also eliminates the objectionable features of the rectangular type.

The Cylindrical Carton or Paper Can.

This type of carton was first tried out, according to a Middle Western cereal company, in 1908, they being the exclusive users for several years. Since then it has made little headway until the last year or more, when it has become much more popular, and during this time a number of cereal manufacturers, both large and small, have been trying it out, with the result that it is being more widely adopted. Its advantages are such that, although it probably never will entirely supplant the rectangular carton, the latter may replace it to a considerable extent for cereal products and other dry foodstuffs put up in packages, as well as many non-edible products.

The cylindrical carton is perfectly satisfactory both as an air-tight and an insect-proof package, because once the label has been applied an hermetically sealed package is the result. The slip cover and bottom cap fit down closely over the sides of the carton about half an inch. The bottom cap is usually glued on when the

³Recently there have appeared on the market several patented rectangular cartons which have special devices for opening and closing. These are still in the experimental stage, and also add quite a bit to the expense of the carton.

¹The writer wishes to acknowledge his indebtedness to Dr. F. H. Chittenden, under whose direction this investigation was undertaken. Acknowledgement is also due the Samuel M. Langston Co., Mr. A. C. Haskins, of the Albers Bros. Milling Co., and several other firms and individuals for courtesies extended and data supplied.

²Parker, Wm. B., 1913. *A Sealed Paper Carton to Protect Cereals from Insect Attack*. U. S. Dept. Agr. Bul. No. 15, 8 p., 8 f.

1915. *Control of Dried Fruits in California*. U. S. Dept. Agr. Bul. No. 235, 15 p., 18 f.

carton is made, and the cover is held in place by the label. The latter is glued or pasted around the body of the carton, with the edges extending over the sides of the cover and bottom cap, thus making an absolutely tight seal. To open the carton the consumer merely cuts the label just below the edges of the cover, on a line which is usually marked on the label, and the cover is then removed. When the desired amount of the contents has been taken out, the cover is replaced and because it fits down so closely over the sides of the carton, a tight package results, which may be put away on the shelf with a reasonable certainty that the contents will not deteriorate through exposure to the air, nor become infested with insects, as is liable to occur with the rectangular carton. Illustration 3 shows a cylindrical carton which has been opened and closed, contrasted with the rectangular type shown in figures 1 and 2, which when once opened is permanently open.

This advantage has been so apparent, according to the observations of one cereal manufacturer, that the cylindrical carton has been retained by the consumer in a number of cases after the contents were used up, and refilled with the product taken from a rectangular package. The present and growing popularity of the cylindrical carton is largely due to this feature of its usefulness.

Disadvantages of the Cylindrical Carton.

There are several disadvantages of the cylindrical carton which in some cases may be great enough to prevent its adoption. It requires more space, in storage, both before and after filling, in the shipping cases, and on the shelves. Rectangular cartons come from the manufacturer "knockdown," and require very little space and also take a lower freight rate. The fibre cans cannot be "knocked down," and hence require a great deal more space. A messenger boy could deliver a thousand empty "knockdown" rectangular cartons, but it would take a large truck to deliver the same number of the cylindrical type. If the cartons are ordered in large numbers, as they must be to get a low price per thousand, the fibre cans will require a considerable space for storage before using, while the same number of rectangular cartons would require only a few feet of space.

However, these objections to the cylindrical carton can be overcome by placing an order at a local factory for a large number, with deliveries at frequent intervals, as they may be required. Or better still, where the output of the plant is large enough to warrant the initial expense, the installation of paper-can-making machinery will make it possible not only to manufacture the cartons just as fast as they are needed, but also to produce them at absolute cost, thus eliminating the profit charged by the carton manufacturer—usually an advance of from twenty to thirty per cent over the actual cost of material and labor.

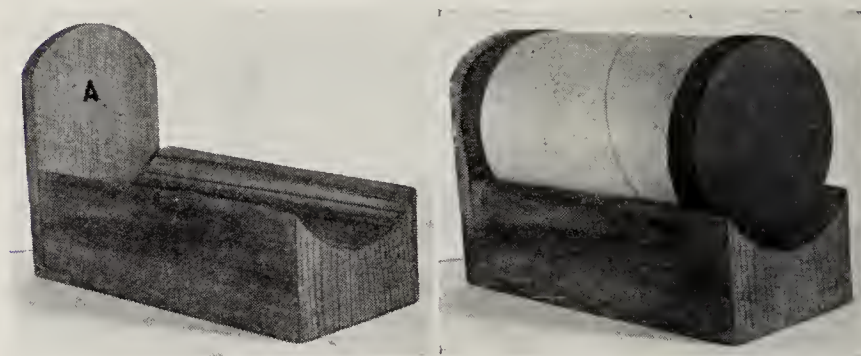
The packing cases or containers must be larger for cylindrical cartons than for the rectangular types, because with the former there is so much waste space between cartons. Cylindrical cartons do not lie flatly together as do those of the rectangular type, so that the pressure on the sides is concentrated on a line of contact between the cartons. However, their cylindrical shape makes possible considerable handling in the packing cases without any damage resulting.

The disadvantage of requiring more shipping and storage space for the filled carton can be overcome by the fact that certain classes of goods can be com-

pressed in the fibre cans without bulging the sides, as the pressure is distributed equally all around. Goods cannot be compressed in rectangular cartons, because the flat sides will bulge out. However, as the desire of most packers seems to be to make the package appear as large as possible in order that it will be attractive to the consumer, it is probable that they would prefer to pay the extra cost of the larger packing cases rather than to compress the product into a smaller carton. The extra cost of packing cases at the present time is about four cents for a container holding twenty 24-oz. packages of rolled oats.

Labeling the Cylindrical Carton.

The carton is filled, weighed, the slip cover put on,



4 Hand Labeling Device. 5

and passed on to be labeled. There are two methods of labeling, by hand and by machine. In the hand method, a soft paste, usually made of flour and water, is applied to the plain side of the label with a large brush. If a small crew is working, about a dozen or two labels are pasted at a time, for reasons of convenience, and so that the paste will have a chance to moisten the paper. If a large crew is working, one person will paste labels continuously. The operator places a pile of labels, plain side up, on the table in front of him. The brush, which is the same width as the label, is dipped into the paste, and a thin, even layer applied. The operation is done in a single forward and backward movement, beginning at the end of the label farthest from the operator. The brush makes one sweep towards the operator, and then back, which covers the plain surface with paste. As the brush is raised up a little, preparatory to the backward sweep, the end of the label next to the operator sticks to it, and by a quick movement is shoved along with the left hand, following the brush, until it is folded even with the farther edge. The pasted surface is thus folded together, an operation which keeps the paste from smearing the printed surface of another label, and also permits the labels to be handled more easily. Care must be taken to use soft paste, and not to let the pasted labels lie too long before using, or the pasted sides will stick together.

The process of pasting the labels for both types of cartons in some large plants is to soak them the day before using in a thin solution of paste, so that when they come to the operator they are thoroughly soaked through. This wet label, on drying, shrinks to the carton at every point. After labeling and inspection, they pass through a drier, which sometimes runs up several stories in the plant, and on coming down are ready to be packed in boxes for shipment. The label stock must be of a particular quality, as just any class of paper would not stand this rather severe treatment.

The label is then wrapped tightly about the carton.

with the edges of the label sides extending over the sides of the slip cover and bottom cap, making a perfect seal. The carton is either placed at one end of the pasted label, and rolled along until it is pasted down clear around, or more often, it is placed in the middle of the label, which is then wrapped around, first on the side nearest the operator, and then from the opposite side.

Figures 4 and 5 show a labor-saving device often used in labeling fibre cans. The filled carton is placed in the device with the slip cover against the headboard (a). This holds the cover on tightly. The wet label is grasped by each end with the pasted side down, placed about the carton, and rubbed down smoothly. The label is now applied to about two-thirds of the carton, enough to hold the cover in place firmly. The carton is then removed from the device, and the two end flaps of the label pasted down.

Care must be taken to get the label started absolutely straight, or else it will not register evenly all

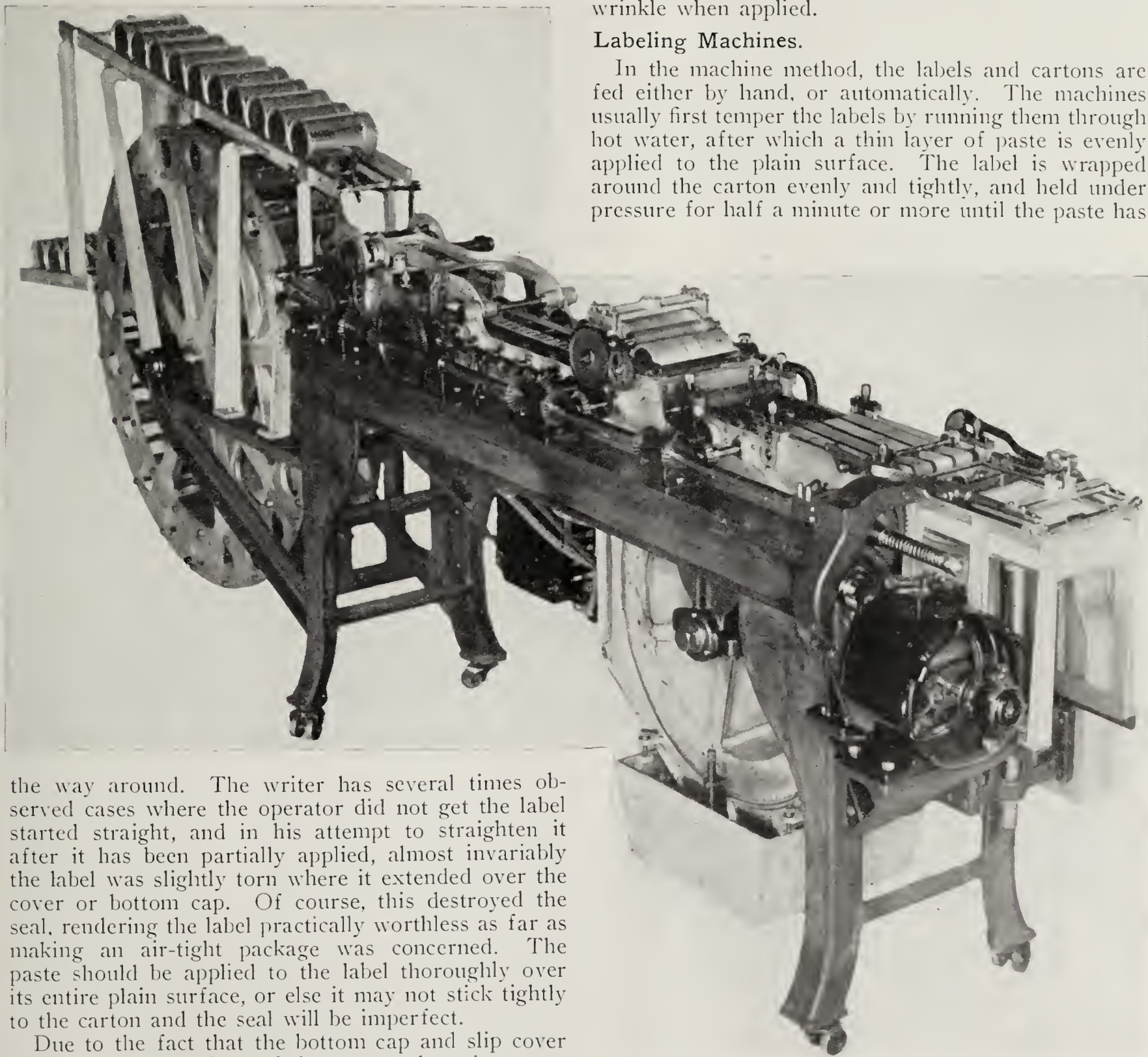
uneven surface, and on drying shrinks tightly to the body of the carton.

At an extra cost of about fifty cents per thousand, the ends of the cylindrical carton can be reduced or "shouldered," so that when the bottom cap and cover are applied, they fit flush with the sides of the tube. This makes an even surface to label and the label is more easily applied, especially when a machine is used. However, this is unnecessary, as the label can be applied to the uneven surface very satisfactorily, both by hand and by machine, and hence the extra cost of shouldering in most cases would not be justified. Moreover, as the process of shouldering is not an accurate one, making the diameter where the cover fits on vary slightly, there is a possibility that in some cases the cover will not fit tightly and the label may be broken where it laps over the cover.

If there is a grain in the label paper, the paper should be printed so that when applied to the carton, the grain will be up and down; if the grain runs around the carton, the label is much more likely to wrinkle when applied.

Labeling Machines.

In the machine method, the labels and cartons are fed either by hand, or automatically. The machines usually first temper the labels by running them through hot water, after which a thin layer of paste is evenly applied to the plain surface. The label is wrapped around the carton evenly and tightly, and held under pressure for half a minute or more until the paste has



6, Automatic Labeling Machine.

the way around. The writer has several times observed cases where the operator did not get the label started straight, and in his attempt to straighten it after it has been partially applied, almost invariably the label was slightly torn where it extended over the cover or bottom cap. Of course, this destroyed the seal, rendering the label practically worthless as far as making an air-tight package was concerned. The paste should be applied to the label thoroughly over its entire plain surface, or else it may not stick tightly to the carton and the seal will be imperfect.

Due to the fact that the bottom cap and slip cover fit down over the sides of the carton, there is an uneven surface to which the label must be applied. However, the latter, being moistened, stretches over the

a chance to "set." The labels are applied at the rate of from thirty to seventy-five per minute, depending on the make of the machine and the size of the carton.

Figure 6 shows a fibre-can labeling machine, which is claimed to have a capacity of thirty to thirty-four cans per minute. The feed is automatic, for both the cans and the labels. The sales price was not quoted, but was said to be less than the amount the machine will save in the cost of wrapping in less than a year—that is, based on the saving of the machine as compared with hand wrapping, at least \$3,000. This machine can also be used to label tin cans.

Another machine which came to the writer's attention was stated by the manufacturers to have a capacity of seventy-five cans per minute. This required an operator to feed the cans and another to take them away. It was not adjustable to different-sized packages. The machine was quoted at \$850.00. Its shipping weight is about 500 pounds, crated. There are other labeling machines on the market, but definite information concerning them is not available.

Cost of Labeling Cylindrical Cartons.

Data secured by the writer on the speed and cost of labeling cylindrical cartons by hand varied considerably, the lowest being 750 cartons per person per day, at a cost of \$2.30 per 1,000, in a very small plant where labeling was done only half the time, to 4,000 cartons per day per person, at a rate of 45 cents per 1,000, in a very large plant where expert labelers were employed continuously. Other plants gave averages of 1,920 cartons per day, at a cost of 90 cents per 1,000, and \$1.00 and \$1.25 per 1,000 cartons. The average cost of labeling in most plants will be somewhere around \$1.00 per 1,000, running lower in the larger plants, where work is continuous, and expert labelers are employed, and higher in smaller plants where the work is not continuous, and hence the labelers are not quite so expert.

Cylindrical cartons can be labeled about twice as fast as the rectangular type, hence labor charges for labeling the former would be only half as much as for the latter.

Machine labeling is figured to cost about 10 cents per 1,000 cartons as a maximum. At that rate the machine would save at least 35 cents per 1,000 over hand labor, while the average saving would be about 90 cents per 1,000. For a plant with an average daily output of 10,000 packages, the saving at this rate would be from \$3.50 to \$9.00 per day, or for a year of 300 working days, from \$1,050 to \$2,700, either of which sums would more than pay the cost and complete installation of one of the wrapping machines described.

The Cost of Cylindrical Cartons.

Data on the cost of cylindrical cartons, as might be expected, vary considerably. It is almost an impossibility to get comparative figures of the cost of the two types of cartons under the same conditions. The price of paper stock has fluctuated to such an extent that an estimate at one date would be very inaccurate a short time later; therefore, the figures given herein may not be applicable under the present conditions. However, the price of paper stock for both types of cartons has advanced simultaneously, so the comparative cost of the two types will remain the same, even though the actual cost of both has increased greatly.

An eastern manufacturer submitted the following figures, representing the actual average cost per 1,000

cartons during a run with a crew having three months' experience, and under normal conditions.

Table I.

ACTUAL COST OF MATERIAL AND LABOR PER THOUSAND FOR MANUFACTURING CYLINDRICAL CARTONS.

Can 4 1/16 in. diam. by 7 1/8 in. long.	
Labor	\$.30
120 lb. tube stock at \$24 a ton.....	1.44
Waste .....	.15
48 lb. cover stock at \$45 a ton.....	1.01
Waste .....	.34
5 lbs. glue at 6c.....	.30
Putting on tops and bottoms.....	.30
	<hr/> \$3.84
Can 5 1/4 in. diam. by 9 1/2 in. long.	
Labor	\$.40
211 lb. tube stock (including waste).....	2.53
107 lb. cover stock (including waste).....	2.40
9 lbs. glue at 6c.....	.54
Putting on tops and bottoms.....	.30
	<hr/> \$6.17

Under the present abnormal conditions, body stock is about \$45 to \$50 per ton, and cover stock \$80 to \$90 per ton.

In manufacturing cylindrical cartons, about 10 per cent of the tube stock is unavoidably wasted, together with about 40 per cent of the cover stock. To figure the cost of a given style of carton, weigh the tubes, add 10 per cent for waste, and to the weight of the sample covers add 40 per cent to include the cover waste. One pound of cold glue will cover about 75 square feet of surface, and one pound of ground glue mixed and used hot will cover from 200 to 300 square feet of surface.

A large cereal mill in the Middle West gave as an actual test run on a standard-sized tube (20 ounces net of rolled oats) of chip paper, including bottom cap glued on, \$3.10 per 1,000 cartons, and \$1.20 for labeling them by hand. In the same plant labeling rectangular cartons of the same capacity by hand cost \$2.10 per 1,000. The label for the above tube cost \$2.00 per 1,000.

The following figures formed the basis of calculation from which a large Pacific Coast milling company decided to adopt the cylindrical carton for their products, and to install their own paper can-making machinery.

Table II.

COMPARATIVE TOTAL COST OF CYLINDRICAL AND RECTANGULAR CARTONS.

For 1,000 cartons holding 24 ounces of rolled oats each.	
33 lbs. cover stock at \$40 a ton.....	\$0.66 1/2
127 lbs. tube stock at \$35 a ton.....	2.23
Labor, 2 men at \$6 produce 10,000 a day.....	.60
Glue .....	.75
Labels	3.85
Applying labels by hand.....	1.00
	<hr/> 9.09
Regular knockdown cartons of the same capacity cost:	
Per 1,000	\$ 7.50
Labels for same, three-piece	5.85
Applying labels by hand	1.80
	<hr/> 15.15

The difference in favor of the cylindrical carton was \$6.06 per 1,000.

In the foregoing figures the amount for the cylindrical carton must be considered as representing the actual cost of material and labor only, whereas that for the rectangular type is the total cost of manufacture and includes delivery to the cereal plant. The difference would be less if the actual costs of mate-

rial and labor only were shown for the rectangular cartons.

Another quotation from a carton manufacturer was, for a $4\frac{1}{2}'' \times 6\frac{3}{8}''$ carton, \$13.50 per 1,000, and for a $4\frac{1}{2}'' \times 7\frac{7}{8}''$ size, \$15.50 per 1,000. These prices are for 25,000, with a reduction of 50 cents per 1,000 for each 10,000 more. At this rate 50,000 would cost about \$12 and \$14 respectively, while 100,000 would cost about \$10 and \$12 per 1,000.

The following data were supplied from the books of a Western carton manufacturer; size of carton, $4\frac{1}{2}'' \times 6\frac{3}{8}''$.

Table III.

ACTUAL COST OF PRODUCING 3,098 CYLINDRICAL CARTONS.	
For 10,671 covers.	
324 lbs. cover stock	\$12.15
Labor	3.49
Overhead charges ⁴	4.13
	<hr/>
	\$19.77
	or \$1.85 per 1,000
For 3,098 cartons ($4\frac{1}{2}'' \times 6\frac{3}{8}''$).	
Covers, 6,196 at \$1.85 per 1,000	\$11.48
Tubes, 185 lbs. at \$59 per ton ⁵	5.46
Tubes, 159 lbs. at \$35 per ton ⁵	2.78
Labor	4.27
Overhead charges	4.81
	<hr/>
	\$28.80
	or \$9.375 per 1,000

⁴Overhead charges include light, heat, power, insurance, rent, etc., which are figured in proportion to each order.

⁵These different prices represent stock bought at different dates.

This manufacturer added 15 per cent to cover all office expenses, and 25 per cent for profit, making the total cost of \$13.12 per 1,000. This is for a small order and the rate for 1,000 cartons for a large order would be correspondingly smaller.

One of the largest can manufacturers in the country supplied the following data: on the basis of a 22-ounce rolled oats can, the total cost increase under normal conditions of the cylindrical carton with stamped fibre ends over the rectangular type would be about \$1.00 per 1,000. This includes decoration in the form of a printed label, and its application.

One of the large cereal companies writes:

"The tube package holding the same quantity as the square package of our products costs \$5.60 per 1,000 on a material market basis which gives a cost of \$2.00 per 1,000 for the square shell. The label for the round package costs half as much as the label for the square package, this being due to difference in size. As to handling of the package, all costs, of course, depend on whether automatic machines are used. If machines are used for both cylindrical and square packages, the cost is very nearly the same. If hand work is used on both styles, there is a slight difference in favor of the cylindrical package."

A quotation was obtained⁶ from a Western carton manufacturer on the comparative cost of cylindrical fibre cartons, and the unprinted "knockdown" rectangular type, each with a net capacity of 22 ounces of rolled oats, which showed the following differences: for an order of 1,000 cartons, the cylindrical type was quoted at 8 per cent more than the rectangular; for 5,000 cartons the increase for the cylindrical type was 70 per cent, and for 10,000 90 per cent. This would indicate that the cost of making cylindrical cartons in large quantities is not quite double the cost of the rectangular, but that the rate for small quantities is about the same.

⁶March, 1917.

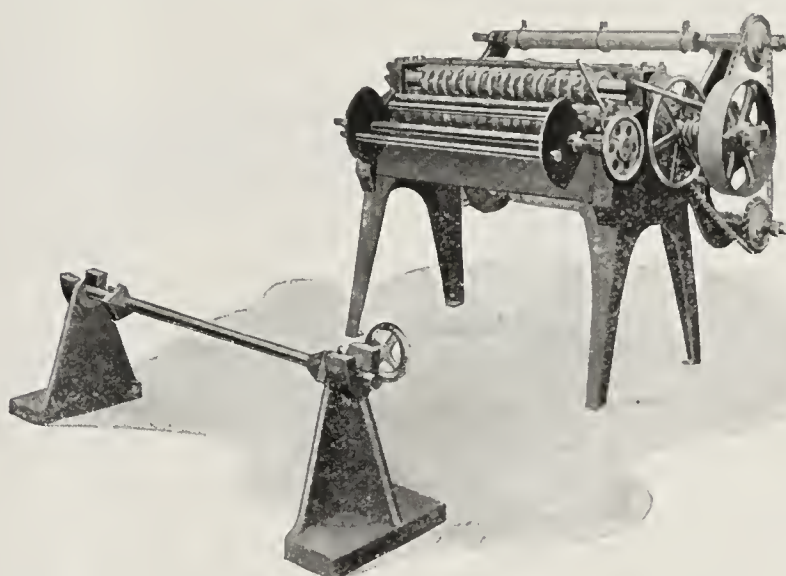
From the above figures, it can be conservatively estimated that the average cost of material and labor in the manufacture of cylindrical cartons will be about \$5.00 per 1,000 under ordinary conditions, or one-half cent each, and for rectangular cartons, \$2.00 to \$3.00 per 1,000, or about one-fourth cent each.

As has been shown, figures giving the cost of the two types of cartons are subject to considerable variation. In explanation of this variance, it must be considered that, while the cylindrical cartons themselves cost more than the rectangular, the cost of the labels, and their application by hand, is only about half as much for the cylindrical type, so that the total cost of the packed cartons will be approximately the same for both types—except when packages are wrapped by hand, in which case there is a slight balance in favor of the cylindrical carton.

On account of the large amount of storage space required, and the necessity of ordering in large quantities to get a low rate per thousand, it is much more important and economical for the user of the cylindrical type of cartons to have his own paper-can-making machinery than it is for the user of the rectangular cartons, since large quantities of the latter can be ordered at a low rate and stored in a small space until needed.

Machinery for Making Paper Cans.

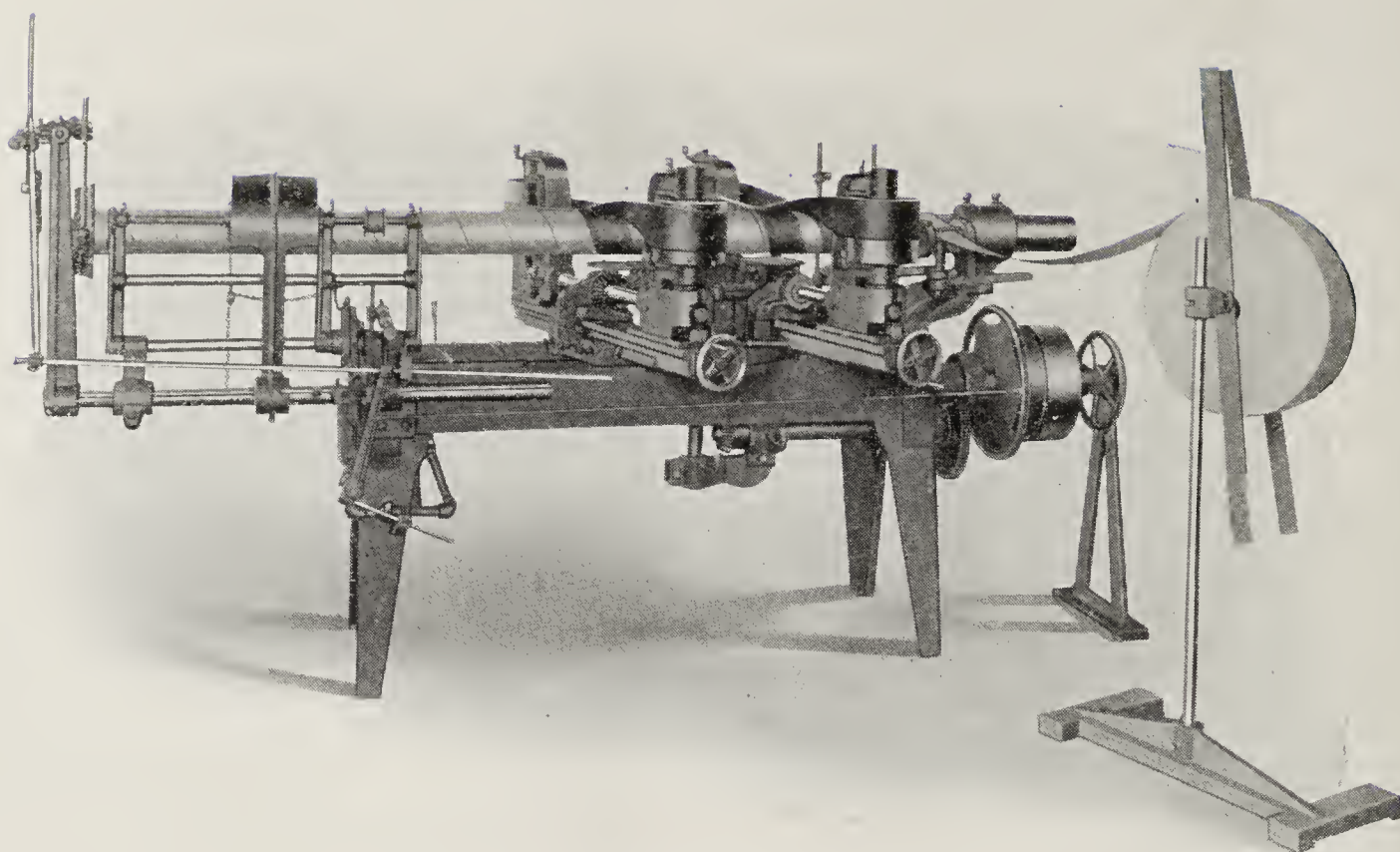
Paper fibre stock for making cylindrical cartons usually comes in large rolls 36 to 48 inches in width.



7, Slitter-and-Rewinder.

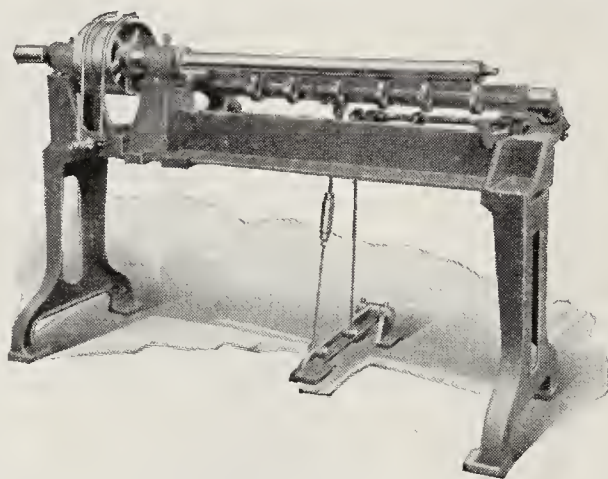
These rolls are cut into the desired width for use, two to five inches, and rewound in separate rolls on a machine known as a slitter-and-rewinder. (Illustration 7.) One operator with this machine can cut and rewind from 5,000 to 10,000 pounds of paper stock per day, depending on the weight of the stock, the width of the rolls, and the number of changes required in the width of the strips being cut.

The next operation is performed on the spiral tube-winding machine (Illustration 8). For making two-ply tubes, two rolls of paper are fed simultaneously into the machine, one strip passing first over a roller which revolves in hot glue, thoroughly covering one surface of the strip with glue. The tube-winder runs automatically, turning out a tube at the rate of 30 to 60 linear feet per minute, depending on the size of the tube and the demand made on the machine by the output required. The tubes are roughly cut to lengths of about eight feet, and then taken to the tube-cutter (Illustration 9), which cuts them into the desired short lengths with clean-cut edges. An energetic operator



8, Tube-Winder.

on this machine can keep up with the tube-winding machine going at the rate of thirty-five to forty feet per minute, provided sizes are not changed too often. It is essentially a hand-operated machine, and the output therefore depends entirely on the expertness of the operator. It is on these two machines, especially the tube-winder, that waste counts for or against profit. As the labor cost of making cartons is only a small part of the total cost, a record output at increased waste in material is to be carefully guarded against.



9, Tube-Cutter.

The tops and bottoms are drawn in a double-acting punch-press (Illustration 10). Straw board is used, and the rolls are first cut to the proper width, then moistened and tempered by being run over a cylinder which revolves in a solution of soap and hot water. Some manufacturers run the strip of paper through the moistener only once, while others run it through two or three times. It is then ready for the punch-press where the covers are stamped out either hot or cold, preferably hot. In the machine illustrated, the feed is automatic, so the constant attention of an operator is not required. With other machines, the strip of board is fed by hand, which is more expensive and wasteful. The speed of this machine is from 100 to 125 covers per minute. In hand-fed machines, the output depends entirely on the ability of the operator.

The cost of a complete unit of paper-can-making machinery, such as is shown in the illustration, was given as follows:

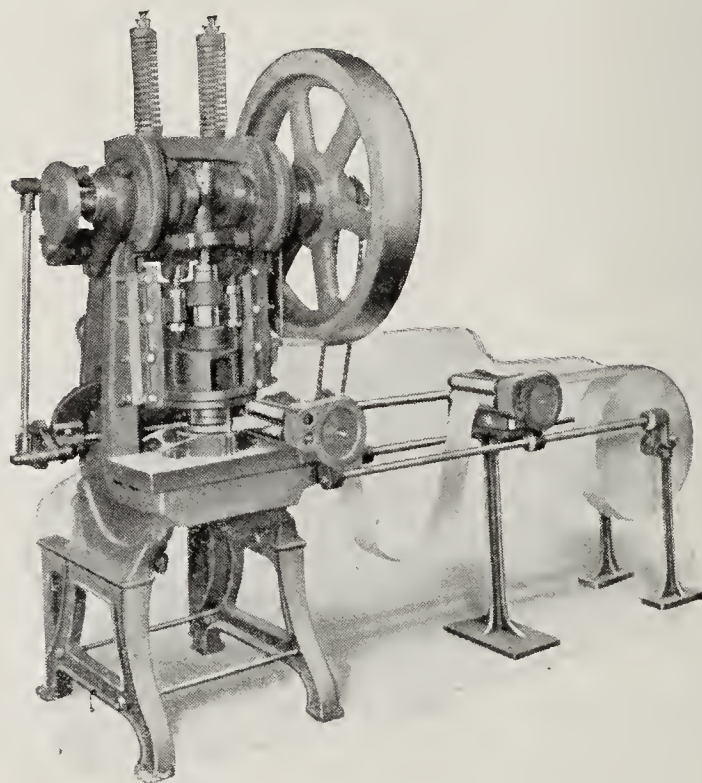
Table IV.

COST OF A COMPLETE UNIT OF PAPER-CAN-MAKING MACHINERY.	
One tube-winder	\$985.00
One tube-cutter	225.00
One 48" slitler-and-rewinder	425.00
(Optional 36" machine)	\$350.00
One double-acting punch-press complete with auto- matic feed	875.00
One 6" moistener for preparing stock for punch-press	75.00
	<hr/>
	\$2,510.00 \$2,585.00

Dies for punching covers:

3" diameter	\$ 80.00
4" diameter	90.00
5" diameter	100.00

The output of a plant equipped with the above machinery would run from 10,000 to 15,000 cartons per day, with two or three operators, and by adding an additional punch-press and tube cutter, and running



10, Punch-Press.

with four operators, 30,000 cartons per day could be produced.

In a plant running at full capacity, a unit of machines consisting of one tube-winder, two tube-cutters, two punch-presses, one moistener, one slitter-and-re-winder, operated by a crew of five men, could produce at least 30,000 cartons per day, and under exceptionally good conditions, running on one size only, as high as 40,000 cartons could be turned out in a 10-hour day. A unit of three tube-winders, four or five tube-cutters, five punch-presses, and one moistener, could produce at least 100,000 cartons of one size complete per day.

When a package of different diameter is desired, the arbor on which the tube is wound is removed, and one of the proper diameter put on. This change can be made in about fifteen minutes. Extra arbors cost from \$15 to \$30, according to size.

Minimum Output Required to Warrant the Installation of Paper-Can-Making Machinery.

The average cost of material and labor in producing paper fibre cans has been conservatively estimated at about \$5.00 per 1,000. The usual profit added by the can manufacturer has been stated to be from 20 to 30 per cent. Twenty-five per cent as an average profit will make \$1.25 per 1,000 added as profit, which can be saved by the carton-user through the installation of paper-can-making machinery. A unit of these machines has been shown to produce at least 10,000 cartons per day. At this rate there will be a saving of \$12.50 per day, or \$3,750 in a year of 300 working days. This is more than enough to pay for a complete unit of paper-can-making machinery, including installation. Even running at half capacity, or 5,000 cartons per day, the saving would be \$7.50 daily, or \$2,250 for a year of 300 working days.

From these figures it would seem that a plant having an average daily output of 5,000 cartons would profit by the installation of paper-can-making machinery. It would have to run only 356.5 working days, or about fourteen months, to pay for the cost of the machines. A plant with an output of 10,000 cartons per day, or more,

should by all means have its own paper-can-making machinery, since the machines would more than pay for themselves in less than a year.

Summary.

The cylindrical carton will make a very satisfactory container for a large variety of substances, such as seeds, tea, coffee, spices, confections, malted milk, salt, soda, lye, baking powder, washing powder, drugs and chemicals.

Cereal products, dried fruits, etc., should be put up in sanitary sealed packages. Insect infestation is prevented, the contents are better protected, and are preserved in their proper condition for a longer time.

Cartons are sealed by a printed label being pasted or glued tightly around a plain carton, or a paraffined paper about a printed one.

The seal of the ordinary rectangular carton now most commonly used is quite liable to become broken or not be sealed tightly.

The rectangular carton, when opened, is permanently open, leaving the unused part of the contents without protection.

The cylindrical carton is perfectly satisfactory as a sealed package, the seal is not so liable to become broken, and after being opened by the consumer it can be closed tightly again, protecting the remainder of the contents.

The cylindrical carton requires more space than the rectangular, both before and after packing.

Cartons can be labeled by hand or by machine.

Cylindrical cartons can be labeled by hand twice as fast as the rectangular type, hence at half the cost.

Labels for cylindrical cartons cost half as much as for the rectangular type.

Cylindrical cartons themselves cost about twice as much as rectangular.

A complete set of paper-can-making machinery, capable of producing 10,000 cartons per day costs less than \$3,000.

A cereal or other plant having an output of 5,000 or more cartons per day should have its own paper-can-making machinery.



11, Paper Fibre Carton.

Fisheries Commissioners to Meet.

The Ninth Annual Convention of the National Association of Fisheries Commissioners will be held on May 14 and 15, at Richmond, Va., at Murphy's Hotel.

All members are urged to be present, as conditions that confront the country, in view of the conservation of food, call for the most energetic assistance and co-operation. Matters will be taken up at this convention that are of great importance to the fisheries industry. Many papers will be read and discussed on subjects relative to the wastefulness of salt water resources, the necessity of conservation, the menace of population, etc.

New York City Gets \$50,000.

In spite of very strong protests from the N. Y. Fruit and Produce Trade Association, the Mercantile Exchange, the N. Y. Branch of the National League of Commission Merchants, the N. Y. Food Distributors'

Association, and many taxpayers' associations, the Board of Estimates of New York City has granted the request of Market Commissioner Day for an appropriation of \$50,000 to put the City in the business of buying and selling food.

The N. Y. Food Distributors' Association stated: the City's project certainly cannot succeed with such a small capital as \$50,000; in any case no emergency now exists and such a move is therefore unnecessary and unjust; and the fact that the City has sold butter and eggs to the fashionable Broadway restaurants shows that its purpose is not relief for the poor.

National Poultry, Butter and Egg Convention.

The National Poultry, Butter and Egg Association will meet in Chicago this year. The matter of location for the convention with Boston as the leading competitor of Chicago was submitted to the members. The dates will be October 7 and 8.

Egg Breakage Hearing

ON April 24, 1918, in New York, the hearing begun in Chicago on March 7 in the attack being made by the National Poultry, Butter and Egg Association against the Trunk Line Egg Inspection Rules and the Five Per Cent Exemption Rule was renewed before the Interstate Commerce Commission. Evidence was submitted to show that the system under which the carriers refuse to inspect egg cases or to admit liability except where the cases show exterior damage, such as breakage or smearing, is unjustified and unfair.

With such a protection as the inspection rules and the Five Per Cent Exemption Rule¹ it is obvious that the carriers are encouraged in negligence in the handling of eggs. The outstanding victory achieved at the hearing by the National Poultry, Butter and Egg Association was the virtual agreement by the carriers to cancel the Five Per Cent Exemption Rule except as it applies to "straight current receipts." What deduction for breakage shall be allowed on "current receipts" still remains to be settled—which is particularly difficult in view of the fact that the term is a loose one and can mean anything. The outstanding fact brought out by the hearing was the responsibility of the packer in proper handling of the eggs.

In order to determine the relative resistance to breakage of eggs when subjected to different impacts or shocks, there were submitted at the hearing the results of laboratory tests made at the Armour Institute of Technology for the National Poultry, Butter and Egg Association. The following is a summary of the results of these tests and conclusions to be deduced from observing and studying the facts:

In conducting this investigation every precaution was taken to simulate identical conditions for all parallel tests. Before filling the case each egg was numbered, examined for shell defects, and its location and position in the filler and case recorded. In refilling the case for a specified test, each egg was re-examined, its condition noted, and then returned to its former position and location (except in case of leakage when it was replaced by another candled egg with non-defective shell).

Two types of tests were made: the "pendulum impact" test and the "rolling impact" test. In the former the egg case (and contents) under test was placed between a 3-inch wooden block and a solid wall cushioned by two lengths of 1-inch rubber hose. A 52-pound cast-iron circular disk, of spherical end contour, was suspended in such a manner that the force of impact effected by swinging it through a predetermined arc was delivered against the 3-inch plank, and transmitted to the case.

The "rolling impact" apparatus consisted essentially of a ball-bearing truck constrained by suitably placed ball bearings to run on an inclined railing. The egg case (and contents) under test was mounted on the truck so that one end projected about $1\frac{1}{2}$ inches beyond the body of the truck. The degree of inclination of the railing was adjustable so that it might be

¹The "Five Per Cent Exemption Rule" is a provision made by the carriers to absolve them from breakage or loss not exceeding the rate of $1\frac{1}{2}$ dozen per case, or 5% of the contents; that is, a shipper, if he loses 5% on his shipment can hope for no claims against the carrier.

varied at will. The lower end of the railing was blocked so that the truck and cargo was brought to a sudden stop after reaching the end of its travel. The force of the blow was received by the projecting end of the case. Packing of crates and candling of eggs were performed by a union egg candler delegated by the National Poultry, Butter and Egg Association.

Facts Disclosed by Breakage Tests of Eggs and Some Conclusions Deduced from Them.

1. The same impact in foot pounds of energy applied to a case of eggs in motion results in greater damage than when applied to a case at rest, i. e., when such impact causes breakage.

2. Breakage is less when eggs are packed in the so-called "cup type" fillers than when packed in so-called "honeycomb" fillers; and breakage is less when No. 1 fillers (honeycomb) are used than when the medium or lightweight filler is employed.

3. When sufficient impact was applied to eggs packed in medium or lightweight fillers (honeycomb) to cause breakage, the total resultant breakage was more serious than when No. 1 fillers were used.

4. The pendulum impact test simulates the impact sustained by a car at rest when hit by a switch engine or another car in the act of coupling; the rolling impact test simulates the impact sustained by a car or cars attached to switch engine when backed into and coupled with a car standing still; also the latter test simulates action of eggs in a moving car in a train when the train is stopped or suddenly retarded by application of air brakes. Types of breakage are very distinct—"railroad" and "scattered."

5. Variation between thickness of material used in sides, tops and bottoms of egg cases shows no material effect in changing the extent or character of breakage from identical foot-pound impacts, however delivered.

6. When eggs of slightly defective shell—even to the point of being visible—were packed among sound eggs to the extent of approximately 5 per cent they withstood impacts more severe than the jolts or impacts incident to reasonable railroad handling, and suffered no more than eggs of perfect shell.

7. The appearance of the egg case after sustaining a given impact is by no means indicative of the breakage inside the case.

8. Another form of shock or impact sustained by eggs in transit, and often causing serious damage, is not taken into account in these tests, viz., the up and down jolts which develop breakage especially in top and bottom layers. This shock is more nearly simulated by the "rolling" impact, because the eggs themselves are in motion.

9. There are comparable points between breakage shown in these tests and the breakage of eggs in transit, for a given energy impact, whether in one or a series of blows, must produce approximately the same results. This may be illustrated by taking the weight of a loaded car and finding the energy required to lift car from trucks, etc.

10. The egg is not a "fragile" article when packed in the proper manner; the impact given in the experiments, excluding the two lowest impacts in the pendulum test, in line with approved engineering practice, are far in excess of what should result from normal

handling in transit. Proof: many, many shipments show very slight, if any, breakage at destinations.

11. These tests afford the only available data developed by scientific methods used in laboratory work in dealing with "stress and strain" to ascertain the breaking points of eggs, fillers and cases when the average commercial pack is taken as a type.

12. The eggs put into all cases used in the tests showed a higher breakage (prepacked) than the average damage in rehandled "current receipts." There were no "leakers" or visible checks among all the cases selected at random in the open markets for use in the tests, and it was even necessary to make some "blind" checks from sound eggs.

Exhibits Bearing on Five Per Cent Exemption Rule.

Five exhibits were submitted at the hearing, showing the annual egg crop in the United States, its value, the loss to shippers under the Five Per Cent Exemption Rule, the relation of the value of the crop which is marketed to the cost of marketing (i. e., transportation), and the relation of the marketing cost to the loss under the Five Per Cent Rule. On these exhibits were based the suggestions for a change in the Five Per Cent Rule.

EXHIBIT NO. 1.

EXHIBIT SHOWING ANNUAL EGG CROP IN THE UNITED STATES USING FIGURES TAKEN FROM THE STATISTICAL ABSTRACT PUBLISHED BY THE U. S. DEPARTMENT OF COMMERCE FOR 1915 AND BEING COMPILED FROM THE U. S. CENSUS REPORTS OF 1890, 1900 AND 1910.

Geographical Divisions.	1889 Cases. ¹	1899 Cases.	1909 Cases.	Estimate 1919 Cases.
New England	1,184,608	1,689,552	1,835,939	2,161,604
Middle Atlantic	3,462,953	4,702,581	5,397,387	6,364,604
East North Central.	8,092,513	11,650,649	13,076,804	15,568,949
West North Central.	7,374,219	12,238,141	14,877,873	18,629,700
South Atlantic	2,207,763	3,511,666	4,535,792	5,699,807
East South Central.	2,336,026	3,495,545	4,304,456	5,288,671
West South Central.	1,758,722	3,907,683	5,518,595	7,398,532
Mountain	212,498	605,352	1,183,470	1,668,956
Pacific	694,796	1,320,910	2,313,396	3,122,696
Totals	27,324,098	43,122,079	53,043,712	65,903,519

¹30 dozen eggs in each case.

EXHIBIT NO. 2.

EXHIBIT SHOWING THE VALUE OF EGGS PRODUCED ANNUALLY BASED ON WEIGHTED AVERAGE 1917 PRICES, TAKING NEW YORK, CHICAGO, AND SAN FRANCISCO AS TYPICAL OF PRICES PREVAILING FOR EGGS IN THE RESPECTIVE TERRITORIES IN WHICH THEY ARE LOCATED.

	Cents per doz.
Average price for 1917—	
New York Market	40.26
Chicago Market	34.56
San Francisco Market	39.7

Average price 38.17 1/3

Estimated total production for 1917, 1,899,946,728 doz.

Value, \$725,272,997.63.

Note.—Transcontinental weighted average price is arrived at by taking average prices in the three markets for the year 1917, as shown by the *New York Price Current* for New York, the *Chicago Daily Trade Bulletin* for Chicago, and the figures compiled by the *Pacific Dairy Review* for San Francisco.

EXHIBIT NO. 3.

EXHIBIT SHOWING VALUE OF EGGS CONSUMED IN 1917 IN NEW YORK AND POSSIBLE DEDUCTIONS FOR LOSS THEREON IN LINE WITH 5% EXEMPTION RULE; ALSO SHOWING THE SAME IN RESPECT TO ALL TRUNK LINE TERRITORY.

¹Receipts reported New York Market, 1917...4,357,061 cases (Equivalent to 130,711,830 doz.)

²Weighted average price, 1917, New York Market40.26c per doz.

Value of eggs consumed in New York, 1917...\$52,624,582.76

³Possible deductions under 5% Exemption Rule...\$1,315,614.57

⁴Value of eggs consumed in Trunk Line Territory, 1917\$231,298,357.08
Possible deductions under 5% Exemption Rule \$5,782,458.91

⁵*New York Price Current* (Urner-Barry Company, Publishers).

⁶*New York Price Current*—Grade Western Firsts.

⁷It is estimated that approximately 50% of eggs moving into Trunk Line Territory are less than carlot shipments.

⁸Arrived at by taking U. S. Bureau of Census estimate of population in Trunk Line Territory, 1917, and using New York weighted average price for indicated part of total U. S. egg crop consumed in Trunk Line Territory.

EXHIBIT NO. 4.

EXHIBIT SHOWING RELATION BETWEEN VALUE OF 50% OF TOTAL EGG PRODUCTION¹ IN 1917 AND THE TRANSPORTATION COSTS FOR MOVING EGGS TO CONSUMING CENTERS IN 1917 USING THE AVERAGE CHICAGO-NEW YORK RATE TO COVER THE AVERAGE DISTANCE AND AVERAGE COST.

	Dozen.
Estimated production, 1917.....	1,899,946,728
50% equivalent to	949,973,364
Average transcontinental price, 1917.....	38.17 1/3 cents
Value of 50% of 1917 production.....	\$362,636,498.81

Per 100 lbs.

2nd class,

Penna. Co.

Rate—Chicago to New York, 1/1/17 to 7/26/17.... 68.3c

Rate—Chicago to New York, 7/26/17 to 1/1/18.... 79c

ICC F-326

Average Chicago-New York rate, 1917....73.65c per 100 lbs.

Production, 1917, 1,899,946,728 doz. (63,331,557 cases, 53 lbs. to the case), equivalent to 3,356,572,521 lbs.

Transportation cost\$24,721,156.62

²50% is estimated to be the percentage of the egg crop which is marketed—not consumed on the farms.

EXHIBIT NO. 5.

EXHIBIT SHOWING RELATION BETWEEN TRANSPORTATION COST ON 50% OF THE ANNUAL EGG CROP MOVING TO CONSUMING CENTERS IN 1917 AND THE POSSIBLE DEDUCTIONS FOR LOSS UNDER THE 5% EXEMPTION RULE.

Value of 50% of 1917 crop.....	\$362,636,498.81
Transportation cost of 50% of 1917 crop.....	24,721,156.62
Possible deductions under 5% Exemption Rule	9,065,912.47

Tentative Rules, Covering Egg Deliveries, Submitted at Hearing.

Rule 1. Where carrier determines that space permits examination at his station, consignor shall be permitted to examine top layer of any 10 cases or 20 half cases, a good order receipt to be given by shipper if no damage is visible. If damage is found consignee may: examine top layers of any number of cases; examine succeeding layers of damaged cases until undamaged layer is found, when receipt must be given for contents as examined; if one dozen eggs in any layer are damaged, examine all the layers; if case shows external evidence of breakage, jointly examine entire case.

Rule 2. Where carrier determines space does not permit examination at his station, or prefers to have it some other place, consignee may demand examination at his warehouse within 24 hours of receipt, on application filed at time of receipt, and may stencil cases for identification.

Rule 3. In claim adjustments, damage found shall be conclusive as to damage existing, memoranda shall be kept of all facts relative to treatment and handling of cases and contents, and prompt settlement shall be made.

Rule 4. On discovering eggs deteriorated by heat or cold, consignee shall be entitled to joint examination of entire contents of shipment.

Rule 5. In cities with population of over, inspection for shipper or consignee shall be made by official inspector appointed by local mercantile ex-

change or similar voluntary mercantile organization, inspection for carrier shall be made by official inspector appointed by joint action of all the carriers.

Rule 6. Eggs shipped in second-hand cases or fillers shall be at owner's risk (and move at same rate as standard case).

Rule 7. Consignee at point of origin shall note on bill of lading whether shipment consists of rehandled and repacked eggs or of "current receipts." Claims shall be settled on basis noted, unless carrier shows

that the grade was not that noted.

Rule 8. If at the time of joint inspection shipments are reconditioned and represent a higher grade of eggs and the net return on the shipment is therefore higher, credit shall be given to carrier for any such excess.

Rule 9. Changes in the Five Per Cent Exemption Rule.

(N. B.—The carriers have now consented to cancel this rule on all but "current receipts," as already stated.)

Why Save Food?

By DR. RAYMOND PEARL,
U. S. Food Administration.

EXCEPT for the Central Powers, none of Europe's nations are producing food in sufficient quantities to sustain existence, should they be cut off entirely from outside supplies. Their farmers are in the trenches. Their farms are battlefields. Their plows have been wrought into arms, and their plow horses are drawing cannon. Even before the war they were not self-supporting. Germany was less dependent upon imports than any other European nation—she obtained only about one-fifth of her food from other countries. England imported four-fifths, France more than one-half, and Italy more than a third.

Germany's entire system of autocratic militarism made the nation more amenable to immediate food control than any of the countries with which she is at war. With a system that had instilled in the people a conviction that before everything else came military efficiency, it was not so difficult for Germany to take charge of supply and distribution to such an extent that with barely enough to meet actual needs, every single body could be given the food it required to maintain strength and health.

And in addition, she is now in control of the fertile fields of the lower Danube and the western fringe of Russia. Germany has made prisoners of war till the fields and help to feed the German people. More than any other nation, Germany was prepared to meet the complex problems of war, prepared to maintain food supply on a level that could be met by reduced consumption. The rest of Europe was not prepared. Without help from beyond the seas, the rest of Europe would have starved before now—will starve before this war is over unless that help can be continued and increased.

Those people must be fed. The toll of the U-boats and the unusual demands of war have made such a drain upon the world's shipping tonnage that every vessel must be kept in the shortest possible trade routes. If America alone could supply all of Europe's food it could be done with one-third the number of ships that would be needed if the entire supply had to come from Australia, one-half what would be needed if Europe had to depend entirely upon the Argentine. Thus it is evident that every ship we taken out of the Australian trade virtually trebles the available tonnage, because it can make three times as many trips to America. Or every ship we take from the Argentine channels doubles Europe's import capacity, because it can make twice as many trips to an American port.

The Allies must be fed—so America must feed them. There is only one way we can do it. We must save their food from our normal consumption. By

the first of the year we had sent to Europe our entire surplus of wheat from the 1917 crop. And Europe is still crying for millions of bushels of wheat.

Europe's appeal is a cry from old men, women and children. They have given their all to their soldiers and will continue to give their all until the last one has found relief in the grave. Those soldiers will be fed somehow, even if it means that the women and children in Europe must go hungry. It is to keep strong and healthy the people behind the lines that America must tighten her belt and send every available ounce of food abroad. Thousands of them will starve unless the individual American awakens to his responsibility and carries the war into every home in the United States. What the individual can save, even what one family can save, seems comparatively little when we think in terms of millions of bushels and thousands of tons. But if we remember that there are 22,000,000 tables in this country and that at those tables about 110,000,000 mouths are fed, it is not hard to realize that an ounce or so here and there will soon make the millions of tons and bushels that will save the Allies from starvation.

No army can maintain its strength if the men at the front begin to fear that the old and infirm, the wives and mothers, sisters and brothers, little children and babies back home are not being cared for. If the men in the trenches should be weakened by the thought that the people behind them were starving to death, our first line of defense would begin to move toward Washington instead of toward Berlin. The armies would lose heart, and losing heart would be no more than tin soldiers before the ruthless horde of Huns.

If we want our boys to cross the Rhine instead of to recross the Atlantic, we must feed the Allies. We must send them food in concentrated form, food that will give the greatest possible nutritive value in the least possible shipping space. Their most pressing need is for wheat—millions of bushels of it. There is only one way we can send it—by saving.

Democracy will have to find its justification at America's 22,000,000 tables. The way we eat will be our answer to the slur that democracy is not competent to deal with war. There is food enough for all if we all conserve. We must give Europe our concentrated foods and content ourselves with the many palatable substitutes offered by America.

Eat plenty, but wisely and without waste. Study the food situation and eat for victory. Make your knife and fork implements of war and throw their strength behind our own armies instead of behind the troops of the Imperial Wilhelm.

Sugar Substitutes in Jelly-Making¹

By LEONORE DUNNIGAN

Food Chemistry Laboratories, Iowa State College.

THE recent sugar shortage and subsequent desire to conserve as much sugar as possible has brought to light some interesting possibilities in its economical use and the introduction of so-called sugar substitutes—so interesting, in fact, that most housewives and many manufacturers are developing a real experimental attitude toward them. With the approach of summer, this condition will become more and more noticeable, especially when the products of the war gardens arrive and demand attention. Their care will involve a great deal of preserving and jelly-making as well as canning, and, hitherto, preserves and jellies have meant large quantities of sugar. It is imperative now that these quantities be reduced, if possible, without needlessly sacrificing the pleasing diversion and important mineral constituents which jellies and jams always bring to our winter menus. This result can be gained in one of two ways: either by the successful use of the sugar substitutes or by a material decrease in the proportion of sugar used. For these reasons it seems advisable at this time to point out a few of the facts which science has contributed to the problem in the past and to give a short abstract of the work which has been done in this laboratory.

The pioneer work on jelly was done at the University of Illinois and a short summary of that study is available in bulletin form.² This circular points out that the important constituents for jelly-making are apparently pectin, acid and sugar. Of these three, the sugar might be considered the least necessary. In fact, jellies have been made without³ sugar, although the results could hardly be called edible. The addition of sugar tends to increase the volume of the product, at the same time improving the texture and appearance. As a general rule, the home jelly-maker has no control over the percentage of pectin except as it may be varied by concentration or by the addition of other fruits or the white inner rind of lemons and oranges. The manufacturer, of course, has access to various commercial pectin mixtures. A very simple test (precipitation with alcohol)⁴ has been recommended for making an approximate estimate of this constituent.

As to the acidity of the fruit, the practical jelly-maker has relied almost entirely on taste and previous experience with fruits in an effort to choose the best jelly-making fruits or combination of fruits. The addition of organic acids such as tartaric or citric has been found to be practical but so far is little used outside of laboratory experimentation.

All of these facts are important, but the one which concerns us most at the present time and the one which should be particularly emphasized was first pointed out in the Illinois bulletin quoted above: namely, that most home jelly-makers use too much sugar. The old tradition of measure for measure has been so easy to remember that any inclination to turn from its teachings has been discouraged. The truth is that most fruit

juices permit a very much lower proportion than this. Of course, the volume of jelly produced is smaller for a given amount of juice and the product is sometimes less sweet to the taste, but this season the sacrifice of the fruit juice will be of less importance than the saving of the sugar.

As regards the use of sugar substitutes very little information seems to be available, but there are certainly great possibilities along this line. One of the best of these is honey.⁵ However, due to the shortage of last year's crop, this is not a very practical substitute this season. We hope that with the increased agitation for bee culture throughout the country, honey may soon prove to be of valuable assistance in the solution of the problem. From an economical standpoint, as well as a patriotic one, the best substitute at present is corn sirup, but there may be undiscovered possibilities in the use of sorghum and molasses or the sirup made from sugar beets raised in the home garden.⁶

In connection with a chemical study made in these laboratories on the composition of cranberry juice and the influence of its constituents on the jelly-making properties of the berry, a question arose concerning the amount of invert sugar which a jelly can contain, and chemically pure glucose and levulose were tried. The results were so successful that we were led to the use of naturally occurring invert sugar and corn sirup as a matter of curiosity.

The extracts used in the experiments were obtained by simmering equal weights of the cranberries and water for 15 minutes. During this time the berries were mashed as they became tender. The juice was then strained through heavy muslin bags and allowed to drip over night. This process was repeated for each extraction, using equal weights of water and pulp in all cases. The extraction was then concentrated to three-fourths its original volume and canned. For those who make a practice of saving their fruit juices until the winter prices reduce the expense of jelly-making, this suggestion might be valuable. Too often many cans are filled with a dilute solution which later has to be boiled down, and this year cans must be conserved as never before. When jellies were made from these extractions, using the proportions $\frac{1}{2}$:1, $\frac{3}{4}$:1 and 1:1 (by volume) of sugar and juice, respectively, each increase in the amount of sugar produced a softer jelly until finally the results were of a very gummy consistency. On the other hand, when the proportions $\frac{1}{4}$:1 and $\frac{1}{3}$:1 were used, the product in each case was transparent, of good texture, and retained its shape when removed from the mold.

The jelly was made in the ordinary way, though a criticism recently offered⁷ suggests that a lower temperature can be used and the flavor of the jelly improved. The juice was brought to boiling, the sugar added hot in order to avoid lowering the temperature of the mixture and the jelly cooked until the thermometer registered 101° C. (214° F.). At this temperature the mass gave a jelly test: that is, it formed

¹The study of which this is a part was done under the direction of Prof. Ruth O'Brien.

²Principles of Jelly-Making—Goldwaithe; Univ. of Ill. Bull. Also see Jour. of Ind. and Eng. Chem. 1 (1909), No. 6, p. 333; Jour. of Ind. and Eng. Chem. 2 (1910), No. 11, p. 457; Jour. of Home Economics 2 (1910), No. 1, page 94.

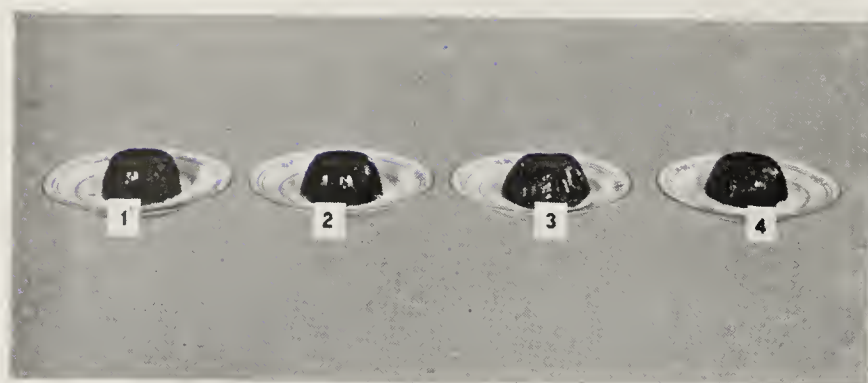
³Jour. of Home Economics 1 (1909), p. 261.

⁴Jour. of Home Economics 7 (1917), p. 338.

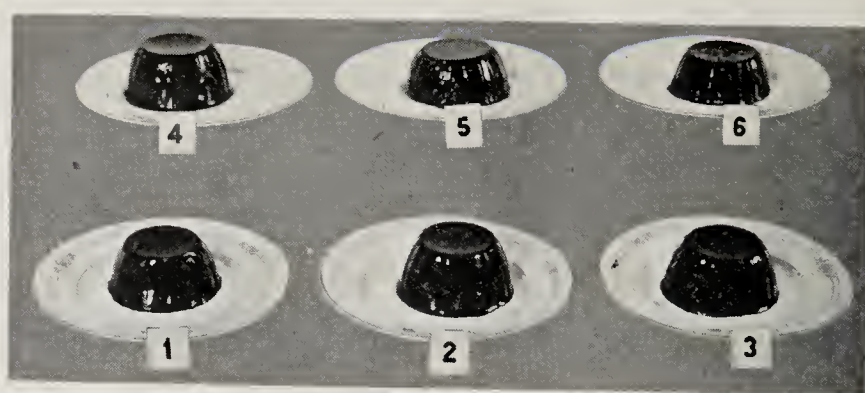
⁵Honey and its uses in the home.—Farmers' Bull. No. 653.

⁶Sugar Beet Sirup.—Farmers' Bull. No. 823.

⁷Jour. of Ind. and Eng. Chem. (1916), No. 5, p. 417.



Apple I.



Cranberry II.



Cranberry I.



Cranberry III.

a continuous film over the spoon and dropped in two drops. This took 10 minutes for all extractions. The jelly produced from the second and third extractions was equally as good as that produced from extraction I. The product from the fourth extraction was a soft, runny mass, though the flavor was not impaired.

As for the results obtained with sugar substitutes, the cuts are almost self-explanatory. The same proportions ($\frac{1}{4}$:1) and the same methods were used throughout; each substitute was measured and the weight used in each extraction. However, on account of the added moisture in the sirup, additional cooking was necessary. Fifteen minutes' rapid boiling was required with each of these before the mixture reached the desired density.

In all cases where honey was substituted for sugar, the product was a quivering mass, of very good texture, tender, transparent and able to retain its shape. When cut, the angle produced showed a very sharp cleavage plane. The natural flavor and color of the fruit was preserved and the volume as compared with the volume obtained when sugar was used was somewhat larger. Light corn sirup produced a jelly equally as good as the results with honey. With the third extraction, however, it was a little softer, though not in the least undesirable. The use of dark corn sirup resulted in an excellent jelly as far as appearance was concerned, though the flavor was slightly impaired and on the whole not desirable. With extraction III, the jelly produced was also a little soft, as in the case of light corn sirup. Jelly made with sorghum was desirable in every way except for the flavor, while with molasses the color of the jelly was changed entirely, and the flavor was very disagreeable. The volume remained equally as large as with the sorghum and sirup. A marked decrease in volume was noticed when chemically pure glucose was used, though the jelly was quite as transparent, tender and palatable as the others. With levulose, the volume was a little larger, though still less as compared with the volume produced by the use of sirups. The sugar substitutes, and also the sugar, with extraction IV produced a very soft jelly,

but the fault lay entirely with the extraction and not with the sweetening used. With regard to the keeping qualities of the results achieved with sugar substitutes, it was interesting to note that the experimental jellies have been kept for two months at room temperature without molding or deteriorating in any way.

In order to get information concerning the use of sugar substitutes with fruits other than cranberries, the above processes were repeated with apples, the only fruit easily obtainable at that time. It happened that the apples procured were not as sour as those generally used for jelly-making. The resulting jelly was of excellent quality though not quite as tender as could be desired. To improve the texture, 0.5 per cent tartaric acid was added and an interesting fact noticed was that an equal improvement occurred with all the various sweetening agents with which the jelly was made.

While we realize that it is impossible to draw general conclusions from only these two examples, we do feel that it is best to advocate this year that a marked decrease be made in the amount of sugar used in jelly-making, and sugar substitutes be introduced as far as possible. The success of this will, of course, depend largely upon the ingenuity of the jelly-maker, as all fruit juices and all extractions of the same fruit will not necessarily react the same way.

Practical References on Jelly-Making.

- Purdue Univ. Dept. of Agri. Ext. Leaflet No. 86.
- Jellies, Jams, Preserves and Pickles.—Ohio State U. Dept. of Agri. Ext. Bul. Vol. 6. Sup. 3-4.
- Jellies, Preserves and Marmalades.—Florida State College for Women. Ext. Bul. No. 18.
- Canned Fruits, Preserves and Jellies.—Farmers' Bul. 203.
- Jellies, Marmalades, from Citrus Fruits.—Cal. State. Cir. 146 (1916), p. 8.
- Points on Canning, Preserving, Jelly and Pickle-Making.—Amer. Cookery, June and July, 1915, p. 50.
- About Jelly and Jams and Marmalade.—Amer. Cookery, April, 1915, p. 112.
- New Jelly Bag.—Good H., July, 1915, p. 135.
- Apple Jelly de Luxe.—G. H., October, 1915, p. 548.
- Beet Sugar for Jellies.—G. H., August, 1915, p. 225.

Score Cards.

- Kansas Ag. College Bulletin 2 (1910), No. 7, p. 30.
- Goldwithe, Univ. of Ill., Vol. II, No. 31.

Second Convention of South Central Officials

THE Second Annual Convention of the Association of Food, Feed, and Drug Officials of the South Central States was held at Little Rock, Arkansas, April 15 and 16, 1918, at the Hotel Marion. The program of the convention was as follows:

April 15.

An Address of Welcome, by Hon. Chas. H. Brough, governor of Arkansas, was responded to by Commissioner Harry L. Eskew of Tennessee, president of the association. Dr. C. L. Alsberg, chief of the Bureau of Chemistry, U. S. Department of Agriculture, then gave the opening address. Committees reported as follows:

Sanitation: C. W. Garrison, state health officer of Arkansas, chairman.

Food and Drugs: J. O. LaBach, head, Food and Drug Dept. of Kentucky, chairman.

Feed and Fertilizer: W. M. Hall, Feed and Fertilizer Lab., Experiment Station of Louisiana, chairman.

Dairy and Dairy Products: Stanton H. Barrett, city bacteriologist, Chattanooga, Tenn., chairman.

Conservation of Foods: Edwin DeBarr, prof. of chemistry, University of Oklahoma, chairman.

Conservation of Feeds: John H. Page, commissioner of agriculture of Arkansas, chairman.

Meat Inspection: F. W. Morgan, city meat and dairy inspector, Chattanooga, Tenn., chairman.

Brief reports on adulterations and misbrandings of foods, feeds, and drugs discovered since the First Annual Convention of this association were given by the commissioners of Alabama, Kentucky, Tennessee, Arkansas, Texas, Mississippi, Louisiana, Oklahoma, and the Chief of the Central District, Bureau of Chemistry.

Addresses followed as below:

Market Milk Problems: Geo. B. Taylor, market milk specialist, Dairy Division, Washington, D. C.; F. A. Mantel, city chemist of Memphis, Tenn.; Tom H. Johnson, inspector, Food and Drug Dept. of Texas; Wm. E. Hibbett, city health officer, Nashville, Tenn.

Feed Control Problems of the South Central States:

Cottonseed Meal: Dr. W. F. Hand, state chemist of Mississippi.

Use of Rice Hulls: J. M. Moore, Dept. of Agriculture of Alabama.

Uniform Food Inspection: J. H. Page, commissioner of agriculture of Arkansas.

J. W. Sample, state chemist of Tennessee.

Food Control Problems of the South Central States: Melton Vaughn, commissioner of health, Little Rock, Ark.; B. B. Ross, state chemist of Alabama; R. H. Hoffman, Jr., food and drug commissioner of Texas.

Meat Inspection: R. W. Tuck, Bureau of Animal Industry, New Orleans, La.; Perry Pinson, city health officer, Paris, Texas; John S. Wood, city health officer, Hot Springs, Ark.; Nolan Stewart, city health officer, Jackson, Miss.

April 16.

The President's Annual Address opened the meeting. More addresses followed:

Work of the State Councils of National Defense: Harry D. Wilson, commissioner of agriculture of Louisiana.

How Can City and State Officials Aid Federal Offi-

cials: J. S. Abbott, Bureau of Chemistry; Geo. R. Ely, Dept. of Agriculture of Arkansas; C. T. Smith, food and drug inspector, Bureau of Chemistry.

How Can Federal Officials Aid City and State Officials: Harry L. Eskew, food and drug commissioner of Tennessee; W. R. M. Wharton, chief of St. Louis Station, Bureau of Chemistry.

Import and Export Food and Drug Control: R. E. Doolittle, chief, Central District, Bureau of Chemistry.



W. F. HAND.

False Advertising Laws and the Patent Medicine Evil: Oscar Dowling, president, State Board of Health of Louisiana.

Co-operation Between City and State Officials: Jno. W. Duke, commissioner of health, food and drugs of Oklahoma.

Drug Control Problems of the South Central States: J. O. LaBach, head, Food and Drug Dept. of Kentucky; C. L. Clay, state analyst of Louisiana.

Shrimp and Oyster Canning Problems: F. W. Liepsner, chemist, New Orleans Station, Bureau of Chemistry; Chas. A. Mohr, city health officer, Mobile, Ala.

Factory Inspections: Jas. R. Garner, food and drug inspector, Bureau of Chemistry.

Medical Inspection of Food Workers: C. W. Garrison, state health officer of Arkansas.

A general discussion concluded the meeting. The subjects were:

Immature Citrus Fruit Control.

The City Health Officer's Work in Relation to Adulteration and Misbranding of Food.

Net Weight Laws and Their Enforcement.

Shell Fish Control.

Membership.

Those eligible to membership in this association are as follows:

ARTICLE VII. The voting members of this association shall consist of the state, county, municipal and federal dairy, food, feed, and drug officials engaged in the enforcement of the laws regulating the sale of drugs, and of dairy and other food and feed products in the states of Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee and Texas.

New Officers:

The new officers elected are:

President, Dr. W. F. Hand, state chemist, Agricultural College, Mississippi.

Vice-President, Hon. Harry D. Wilson, commissioner of agriculture, Baton Rouge, Louisiana.

Secretary-Treasurer, Cassius L. Clay, state analyst, New Orleans, Louisiana.

Executive Committee: Harry L. Eskew, commissioner foods and drugs, Nashville, Tenn.; John H. Page, commissioner of agriculture, mines and manufactures, Little Rock, Ark.; Dr. R. E. Doolittle, chief of the Central District of the Bureau of Chemistry, Chicago, Ill.

Dr. McLaughlin of Massachusetts Resigns.

Dr. Allan J. McLaughlin, state commissioner of health of Massachusetts, has resigned. Dr. McLaughlin went to Massachusetts in November, 1914, having been granted a leave of absence from the United States Public Health Service, to take up that work. He has now been recalled as assistant surgeon general in charge of the Division of Interstate Quarantine, in which capacity he will have control and supervision of that part of the service activities directed towards the prevention of the spread of communicable disease in the United States, and will also be responsible for the sanitation of extra-cantonment zones throughout the country.

Dr. McLaughlin rendered distinguished service in the Philippines, in France and Germany, and as chief sanitary expert of the International Joint Commission of the United States and Canada on the Pollution of Boundary Waters. His brilliant work in Massachusetts has given to public health work a new impetus and meaning, and his accomplishments in new and old fields of endeavor have more than fulfilled the expectations of those who have watched his career in the past. He entered upon his duties in Massachusetts under peculiarly trying and difficult conditions, with the added responsibility of proving the worth of a modern system of public health administration which placed the functions of a state health department under the control of one executive, with an advisory council. Under his hand, the value of such a plan has been demonstrated and is no longer an experiment.

Dr. Kelley Appointed Commissioner of Health of Massachusetts.

Governor McCall's appointment of Dr. Eugene R. Kelley as commissioner of health of Massachusetts and successor to Dr. McLaughlin, which took effect April 1, 1918, is a source of much satisfaction to all interested in the welfare of public health in Massachusetts. Dr. Kelley's scientific training and his ex-

perience as state commissioner of health of Washington has well fitted him to take up the arduous and exacting duties of state commissioner of health of Massachusetts. His work as director of the Division of Communicable Diseases of the Massachusetts department for the past three years has gained for him the co-operation and assistance of the medical profession and local boards of health in Massachusetts, a most valuable asset in the work he is about to take up.

Dr. Irving Watson of New Hampshire Dead.

Irving Allison Watson was born in Salisbury, N. H., September 6, 1849. He received a preliminary education in the common schools of New Hampshire and at the Newbury (Vermont) Seminary and Collegiate Institute, commenced the study of medicine in 1868, attended lectures at Dartmouth Medical College, and at the medical department of the University of Vermont, and was graduated M. D. from the latter institution in 1871, receiving from Dartmouth College the degree A. M. in 1885. Immediately after graduating in medicine, Dr. Watson commenced his practice at Groveton (Northumberland), New Hampshire, remaining there ten years. In 1879 and 1881 he was elected to the state legislature. He was largely instrumental in securing the passage of the act creating the State Board of Health, was appointed one of its members, and at its organization in September, 1881, was elected secretary and executive officer of the board. In October of that year he removed to Concord, where he resided until his death on April 3, 1918.

In 1889 the State Board of Health was also created a State Board of Lunacy, and the executive work of the latter board devolved upon Dr. Watson. He was also appointed registrar of vital statistics.

For many years he was president of the State Board of Cattle Commissioners. A member of the American Public Health Association he held the position of secretary from 1883 to 1897, when he resigned on account of other duties. He was vice president of the Conference of State and Provincial Boards of Health of North America in 1894, and president of the same in 1903, was a permanent member of the American Medical Association, honorary member of the Academia Nacional de Medicina de Mexico, a member of the Societe Francaise D'Hygiene of Paris, the Medico Legal Society of New York, the New Hampshire Medical Society of which he was president in 1903, the Centre District (N. H.) Medical Society, and numerous other organizations.

Don't Use Canning Compounds.

Gardening time is drawing near and with it comes preserving and canning. Each season there appear on the market many so-called canning compounds and against them, James Foust, commissioner of the Pennsylvania Department of Agriculture, issues a warning.

Commissioner Foust says: "Every housewife should be warned against the fake canning compounds which consist chiefly of boric acid, a poison injurious to the health. The sale of foods containing boric acid is prohibited by the state food laws and surely no housewife should attempt to use a poison that is prohibited from being used in scientifically conducted food establishments.

"The fake compounds are sold under various trade names and may be the cause of much sickness during the summer among children who are fed food products containing boric acid put up in their own homes. Chemical preservatives are not necessary in canning fruits and vegetables and every housewife should refrain from being influenced for any cause whatever in using them."

Government Tests in Handling Lettuce

In view of the added importance attached to lettuce because of Dr. McCollum's "fat soluble A," somewhat extended space is here given to a report of recently conducted government tests having to do with the Florida crop.—Editor's Note.

THE lettuce and celery crops of Florida contribute annually about \$1,500,000 to the incomes of the truck growers in that state. About 4,000 acres now are devoted to the culture of these crops, and this area is being increased constantly.

Diseases and insect enemies to which most cultivated plants are susceptible quickly appear in new localities where the plants are introduced. Although they may not be apparent at first, when climatic and other conditions are favorable these enemies may so increase from year to year that the crops cannot be grown successfully.

Oftentimes the problems that have confronted the lettuce and celery growers during the last few years have been due to such conditions. Heavy losses have resulted from decay not only in the field, but in apparently sound produce while in transit. This condition made it seem desirable for the Department of Agriculture to undertake a series of investigations with a view to determining whether the losses occur from the time the products leave the field until they reach the consumer.

The Bureau of Plant Industry, of the Department of Agriculture, has conducted handling and pre-cooling investigations with several crops in other sections of the country and similar investigations were begun with lettuce in Florida.

The experimental work was done in the vicinity of Palmetto, in Manatee County, the center of one of the largest lettuce-producing sections of Florida. Lettuce had been grown there on a commercial scale for 15 years or more. In a great many cases it was found that lettuce had been grown year after year on the same land. As a result, practically all the cultivated fields in this section were infected with disease-producing organisms.

Probably the most dangerous enemy of the lettuce crop is a fungus disease (*Sclerotinia libertina*) commonly known as lettuce drop, which causes tremendous losses yearly. Under conditions favorable to the growth of the fungus, whole fields sometimes are destroyed within a short time. The first indication of the presence of the disease is a slightly wilted appearance of the lower leaves.

The drop produces a discolored or watery area on the under sides of the infected leaves, and this is followed quickly by the appearance of white masses. The disease spreads rapidly throughout the head, causing it to collapse into a slimy mass. Infected leaves often may be found on heads that appear to be perfectly healthy, and sometimes it is impossible to find in a field a single plant that does not show some signs of infection.

The general practice of most growers in preparing the lettuce for market is to cut off all plants close to the ground. The worst of the bottom leaves are then trimmed, and the head is placed in the hamper or crate.

The hampers are packed tightly, the lettuce heads forming a compact mass that cools rather slowly. In addition, the hampers are loaded in the cars in such a manner as to greatly interfere with the natural air circulation. The hampers are placed horizontally, with the tops and bottoms alternating. By this arrangement

the hampers are fitted together and the pressure is so distributed that they do not break readily. As usually loaded into the cars the hampers are four layers high. This leaves air space above the load, but the hampers are so close together that the circulation of air between is very slow, and those in the center of the car retain the field heat for a long time. Most plant diseases develop rapidly at the higher temperatures, and this is particularly the case with lettuce drop. As a result, a great deal of lettuce has arrived on the market in unsound condition.

In order to determine the effect of greater care in preparing lettuce for shipment, various methods of cutting were tested in these investigations. It seemed evident from the start, to the investigators, that the infection occurred mainly through the lower leaves, which rest on the ground. Therefore the lettuce was cut at a point just below these leaves. This method left the three or four under leaves untouched on the ground.

If one or two of the leaves on the head showed signs of decay they were pulled off. If a large number of leaves were diseased or if the main stalk showed signs of disease, the head was discarded. Only lettuce that appeared entirely free from diseases was included in these carefully cut lots.

The commercially cut lettuce is dirty and shows diseased areas on the lower leaves, whereas that carefully cut is clean, attractive, and free from disease. The carefully cut lettuce was packed in accordance with commercial methods, and a similar lot, cut and hauled throughout commercially, was obtained from the same field at the same time for purposes of comparison.

The lots obtained each day were divided into two parts: half of the carefully cut lettuce and half of that commercially cut was pre-cooled, and comparable lots were placed under regular refrigeration. The pre-cooling was done by means of the portable pre-cooling plant. One thermometer was placed in the lettuce near the outside of the head end of the package and one in the center in each of six hampers, which were located as follows: two hampers at each end of the car, next to the bunkers, placed midway between the side walls, one at the top and one at the bottom of the load. The other two hampers were located as near the center of the car as possible, one at the top and one at the bottom of the load. The thermometers were connected with a main cable, which extended through the side ventilators to the outside of the car and provided a means of accurately determining the temperature at any time without opening the doors.

The pre-cooling was commenced as soon as possible after the cars were loaded and continued until the average temperature of all the thermometers was about 40 degrees Fahrenheit.

An exactly similar lot was shipped at the same time in a refrigerator car that was not pre-cooled. The two cars went to New York, where a representative of the Department of Agriculture inspected them upon their arrival and again three days later.

Comparable lots, both pre-cooled and non pre-cooled, were held at Palmetto in an iced refrigerator car and

kept under approximate transit temperature conditions. It was possible to keep the temperature in this holding car under close control, so that these lots gave a good index of the effect of temperature on the development of decay. Six days after cutting—the average length of time required for the cars to reach the principal Northern markets—the lettuce was removed from the holding car and inspected. It was then held at ordinary temperatures for three days and again inspected. Accurate records were kept as to the general condition of the lettuce and the amount of decay at each inspection.

Nine full comparable experimental lots were shipped to Northern markets and 16 lots were held at Palmetto during the test. In the non pre-cooled series the carefully cut lettuce showed an average of 59.6 per cent in prime condition upon its arrival at the market, as compared with 25.7 per cent in the case of that commercially cut. The pre-cooled series showed 71.5 prime in the carefully cut, and only 33.7 per cent in the commercially cut lettuce. After holding for three days, the amount of first class lettuce was considerably decreased, but in all cases the carefully cut showed over twice as much first-class lettuce as that commercially cut. Where the non pre-cooled commercially handled lettuce on the first inspection showed a total decay of 44.5 per cent, the non pre-cooled carefully cut lettuce showed only 8.8 per cent decay, or, in other words, the method of cutting that keeps the infected lower leaves out of the hamper reduces the decay four-fifths.

In addition to the decay factors noted, the difference in appearance of the various lots was a point of great importance in determining their market value. In almost every case the carefully cut lots were far more attractive, not only because less decayed but also because the heads were cleaner owing to the removal of the dirty lower leaves. The lettuce in the pre-cooled hampers also was in much better condition than that in the non pre-cooled hampers. Less shriveling, crisper, brighter leaves, and a general freshness of appearance, aside from any question of decay, usually made it easy to distinguish the pre-cooled from the non pre-cooled lots. The heads in the pre-cooled hampers were usually level with the top of the hampers upon arrival at the market, while those in comparable non pre-cooled hampers, because of shriveling and general decay, usually had shrunk several inches below the top.

At the first inspection of the experimental lots held in Palmetto, one-half of the lettuce in each basket was removed and inspected, the lower half being left undisturbed. The inspected half was then repacked and the whole basket held until three days later, when the two halves were inspected and recorded separately. This was done in order to learn what effect removal from the basket and handling while on the market had upon the lettuce. It was shown that there is little difference in the effect of the two methods, such difference as there is favoring the lettuce that was removed and repacked.

There was considerable more deterioration in the lots held at Palmetto, owing to the prevailing higher temperature. Again the effect of careful cutting showed most markedly. Over 98 per cent of the carefully cut pre-cooled lettuce was in prime condition at the end of six days, as compared with less than 71 per cent in that commercially cut. In the non pre-cooled lots the carefully cut lettuce showed an average of 90

per cent of prime heads at the end of the six-day holding period while that commercially cut showed a little over 40 per cent—less than half as much.

In spite of the naturally inferior quality of the lettuce in 1914-1915 the results of both the pre-cooling and the handling work were very marked.

N. D. Food Department on Egg Substitutes.

A sample of "Eggola," manufactured by the Nixon Spice Company of Chicago, has been analyzed by the North Dakota Agricultural Experiment Station.

The package contains 3½ ounces and the following claims are made on the label:

**Compound of Products of Egg, Cereal and Milk.
Artificially Colored.**

Pure, wholesome, convenient and much cheaper than eggs.

The contents of this package of Eggola is the equivalent of three dozen eggs in baking and cooking.

On chemical examination there was found a yellow colored powder which dissolves only partly in water. The color is due to the tumeric, of which there appears to be about 4 per cent present. There was also some cornstarch.

The average hen's egg weighs about two ounces, 10 per cent of its weight being shell. Three dozen hens' eggs would thus have a net weight of 65 ounces, and as the percentage of dry material in an egg is 26.3, the amount of dry matter in three dozen eggs is a trifle over 17 ounces. This package, containing only 3½ ounces, if made up entirely of dried eggs, would only be equivalent to about one-fifth of three dozen eggs.

But it is not made up entirely of dried eggs, containing instead starch, dried skim milk, tumeric and dried egg. The package retails for 25 cents, contains 36 level teaspoonfuls of Eggola, each of which is claimed to be equal to one egg. Obviously the amount of egg used in the formula at this price cannot be large, and one level teaspoonful of the powder could not have enough egg to be of any value in the baking. Of the other ingredients, starch is much cheaper in the form of flour, which is always used, and the housewife does not need to be told of the uses of skim milk in cooking.

The only ingredient of this mixture which is not common and cheap in the kitchen is tumeric, which is used only as a coloring. If the statement on the label had been made to read:

The contents of this package can be made to look like three dozen eggs

it would have been nearer the actual fact.

The label also states that the usual amount of baking powder must be used, and it is the baking powder and not the Eggola which makes the food light.

All housewives have recipes for making muffins, cakes, biscuits, etc., without eggs and if the yellow color is desired, a pinch of turmeric or a drop or two of butter color will do as well as Eggola and be much cheaper, besides fooling no one.

Eggola is but one of a list of similar preparations which have been received in the laboratory, among these being "Eg Save," "Eggette," "Eggoe," "Egis," "Eggine," "Egno," etc.

Bureau of Markets Issues "Food Surveys."

"Food Surveys" is an 8-page pamphlet to be issued monthly by the Bureau of Markets, with additional special numbers as required.

Baking Experiments with So-Called Egg Substitutes

The following report was published in the March Bulletin of the Kansas State Board of Health.—Editor's Note.

THE purpose of these experiments was to determine whether or not egg substitutes could be used in sponge cakes, which are purely an egg product. The directions with the substitutes said to use but half the number of eggs with the substitute.

Method.

Proportions of ingredients used: sugar $\frac{1}{4}$ c., 50 gms.; flour, $\frac{1}{4}$ c., 25 gms.; eggs, 1.

Sift flour with a pinch of salt. Add about two or three tablespoons water to the sugar and cook to 113.5° C. Pour this sirup over the stiffly beaten egg white. Then fold in the egg yolk which has been beaten until stiff and lemon-colored, with lemon juice for flavoring added. When thoroughly combined, fold in very lightly the flour. Pour into an ungreased and unfloured pan, and bake at 185° C. for twenty to twenty-five minutes.

Results.

(See below.)

Conclusions.

That a true sponge cake, one in which no baking powder is used, cannot be made by substituting half the number of eggs with commercial egg substitutes. In all cases the cakes stuck to the pan when done, which is not true of a good sponge cake, and this sticking was due to the sugar in the mixture cooking to the tin.

—Ingredients used— Baking.

No.	Sugar.	Flour.	Eggs.	Egg substitute.	Temperature, degrees.	Time, minutes.	Results.
I	$\frac{1}{4}$ c. 50 g.	$\frac{1}{4}$ c. 25 g.	1	...	185	20	Nice, light cake; even texture; well raised.
II	$\frac{1}{4}$ c. 50 g.	$\frac{1}{4}$ c. 25 g.	$\frac{1}{2}$	$\frac{1}{2}$ t. Eggno.	185	20	Coarse texture; rose to less than half the height of No. I. Fell in center.
III	$\frac{1}{4}$ c. 50 g.	$\frac{1}{4}$ c. 25 g.	$\frac{1}{2}$	$\frac{1}{2}$ t. Eggo.	185	20	Raised to about half the height of No. I; tough.
IV	$\frac{1}{4}$ c. 50 g.	$\frac{1}{4}$ c. 25 g.	$\frac{1}{2}$	$\frac{1}{2}$ t. Eggnit.	185	20	Fell in center; was coarse and tough in texture. Rose to about one-half the height of No. I.
V	$\frac{1}{4}$ c. 50 g.	$\frac{1}{4}$ c. 25 g.	$\frac{1}{2}$	$\frac{1}{2}$ t. Agosave.	185	20	Was tough and coarse in texture; did not raise any more than II, III or IV.

Another baking test was made to determine whether or not the addition to an original receipt, excluding eggs and substitute, of more baking powder than called for would produce a cake favorable to ones in which substitutes were used in place of eggs.

In this test an increase in volume was obtained com-

parable to that produced in the cases of the substitutes.

	Protein, per cent.	Fat, per cent.	Starch, (diff.).	Weight.	Fat.	Protein.	Claim.	substitute.	Value per pound in terms of whole eggs from standpoint of—	Cost per lb. Dry eggs at 40 cents per doz
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Eggette	27.1	4.8	68.1	32	3.3	18.0	128	\$1.07	\$1.06	
Eggine	24.9	4.1	71.0	32	2.8	16.6	128	1.00	1.06	
Magic Egg-Saver	4.6	4.4	91.0	32	3.0	3.0	128	0.67	1.06	
Eggnit	16.5	3.0	80.5	32	2.0	11.0	160	1.33	1.06	
Agosave	17.2	8.5	74.3	32	5.9	11.5	107	1.33	1.06	
Eggoe	11.7	2.4	85.9	32	1.7	7.8	164	1.14	1.06	
Eggno	15.8	7.9	76.3	32	5.5	10.5	164	1.14	1.06	

Figure 32 in column (1) represents the number of whole eggs containing one pound of dry material. This is the number of eggs to which one pound of the substitute would be equal if the latter were the equal of eggs in all respects.

The figures in column (5) represent the number of eggs containing the quantity of fat present in one pound of substitute.

Column (6) shows the number of eggs containing the amount of protein present in one pound of substitute.

Column (7) shows the number of eggs to which one pound of substitute is equal according to the claims of the manufacturer.

Columns (8) and (9) show the relative cost per pound of substitute and of the dry material of eggs.

The average weight of a hen egg is two ounces. The shell weighs about $\frac{1}{3}$ ounce; the edible portion weighs about $1\frac{2}{3}$ ounces. When dried it will weigh about $\frac{5}{10}$ ounce. A teaspoonful of most of these so-called egg substitutes which the manufacturers claim to be equal to one egg in baking and cooking will weigh about $\frac{1}{10}$ ounce, or $\frac{1}{5}$ that of the dry matter of one egg.

Averaging the selling prices of the seven substitutes herewith analyzed, the consumer is paying more per pound for the substitute than he would pay per pound for the dry material of hen eggs, calculating the hen eggs at 40 cents per dozen. These so-called substitutes are chiefly starch, that is 70 to 90 per cent, while the dried matter of eggs is essentially protein and fat.

Analysis of a sample of Eggette in December showed the claim of manufacturers on cartons to be false. The claim was made that the contents of the package was equivalent to 12 eggs. Analysis showed that on a basis of protein value it was equal to only 1.7 egg. On a basis of fat value it was equal to only $\frac{14}{100}$ of 1 egg. In fuel value it was equal to only 2.6 eggs.

It would seem that the manufacturers of many of these so-called egg substitutes are exploiting the names of a highly valuable and high-priced food to further the sale of their product.

Alimentary Paste Manufacturers Organize.

The Alimentary Paste Manufacturers' Association, Inc., was recently organized and incorporated under the laws of New York. The object is to promote a distribution of macaroni, spaghetti, egg noodles, etc., and to advance the business interests of its members, to keep members advised of matters affecting their welfare, to promote harmony in business, to secure mutual advantage of organization and to assist the United States Food Administration in the conservation of wheat.

This organization is expected at the next meeting to reach a membership of 100. It is the largest of its kind in existence and is composed of well-known macaroni manufacturers as far west as Pittsburgh, but it is looking forward to getting the Western industry interested. The officers are as follows: president, T. H. Toomey, De Martini Macaroni Co., N. Y. City; vice-president, A. Vermylen, A. Zerega's Sons, Consld. Brooklyn, N. Y.; treasurer, G. F. Romeo, F. Romeo & Co., Inc., N. Y. City; secretary, W. A. Schmitt, C. F. Mueller Co., Jersey City, N. J.

Tentative Definitions and Standards for Fruit Pectin, Fruit Jellies, Jams, Marmalades, Preserves, Fruit Butter.

The Joint Committee on Definitions and Standards is considering the advisability of adopting the following definitions and standards for fruit pectin, fruit jellies, jams, marmalades, preserves and fruit butter.

Two public hearings are announced on this subject. One of these will be held in the Bureau of Chemistry, 216 Thirteenth Street, S. W., at 10 A. M. on Monday, May 27, 1918. The other will be held at the Food and Drug Inspection Laboratory, United States Appraiser's Stores, Sansome and Washington Streets, San Francisco, Cal., at 10 A. M., on Monday, June 10, 1918. All persons interested are invited to attend and present any facts pertinent to the subject. Those who desire may present their views in writing to the Secretary of the Committee, Bureau of Chemistry, Washington, D. C., on or before May 27, 1918.

1. *Fruit pectin* is the product possessing high jelly-producing power, obtained from sound fruit or sound products of sound fruit. Fruit pectin conforms in name to the fruit or fruits from which it has been prepared. It may contain color and flavor derived from the fruit used.

2. *Jelly* is the sound, semi-solid, gelatinous product made by boiling whole, clean, sound, properly matured and prepared fresh fruit with potable water, separating the fruit pulp from the liquid by straining or by a process accomplishing the same result, adding sugar (sucrose) to the liquid, and concentrating to the proper consistency by boiling. It conforms in name to the fruit used.

3. *Jelly with pectin* (qualified by the name of the fruit from which the pectin is derived) is the sound, semi-solid, gelatinous product made by boiling whole, clean, sound, properly matured and prepared fresh fruit with potable water, separating the fruit pulp from the liquid by straining or by a process accomplishing the same result, adding sugar (sucrose) and the fruit pectin specified to the liquid, and concentrating to the proper consistency by boiling. This product is also made by using fresh fruit juice in place of the liquid obtained from boiling fruit with water. It conforms in name to the fruit used and in its preparation at least nine (9) pounds of fruit is used to each eleven (11) pounds of sugar.

4. *Jelly with glucose, jelly with corn sirup*, is the sound, semi-solid, gelatinous product made by boiling clean, sound, properly matured and prepared fresh fruit with potable water, separating the fruit pulp from the liquid by straining or by a process accomplishing the same result, adding glucose (corn sirup) to the liquid with or without the addition of sugar (sucrose), and concentrating to the proper consistency by boiling. It conforms in name to the fruit used.

5. *Jelly with pectin* (qualified by the name of the fruit from which the pectin is derived) *and with glucose, jelly with pectin and with corn sirup*, is the sound, semi-solid, gelatinous product made from boiling whole, clean, sound, properly matured and prepared fresh fruit with potable water, separating the fruit pulp from the liquid by straining or by a process accomplishing the same result, adding glucose (corn sirup) and the fruit pectin specified to the liquid, with or without the addition of sugar (sucrose), and concentrating to the proper consistency by boiling. This product is also made by using fresh fruit juice in place

of the liquid obtained from boiling fruit with water. It conforms in name to the fruit used and in its preparation at least nine (9) pounds of fruit is used to each eleven (11) pounds of total dry matter in the sugar and sirup used.

6. *Jam* is the sound product made from clean, sound, properly matured and prepared fresh fruit, by boiling to a pulpy, semi-solid consistence after addition of sugar (sucrose), with or without spices and a vinegar. It conforms in name to the fruit used and in its preparation at least nine (9) pounds of fruit is used to each eleven (11) pounds of sugar.

7. *Jam with pectin* (qualified by the name of the fruit from which the pectin is derived) is the sound product made from clean, sound, properly matured and prepared fresh fruit, by boiling to a pulpy, semi-solid consistence after addition of sugar (sucrose) and the fruit pectin specified, with or without spices and a vinegar. It conforms in name to the fruit used and in its preparation at least nine (9) pounds of fruit is used to each eleven (11) pounds of sugar.

8. *Jam with glucose, jam with corn sirup*, is the sound product made from clean, sound, properly matured and prepared fresh fruit, by boiling to a pulpy, semi-solid consistence after addition of glucose (corn sirup), with or without the addition of sugar (sucrose), spices and a vinegar. It conforms in name to the fruit used and in its preparation at least nine (9) pounds of fruit is used to each eleven (11) pounds of sugar.

9. *Jam with pectin* (qualified by the name of the fruit from which the pectin is derived) *and with glucose, jam with pectin, and with corn sirup*, is the sound product made from clean, sound, properly matured and prepared fresh fruit, by boiling to a pulpy, semi-solid consistence after addition of glucose (corn sirup) and the fruit pectin specified, with or without the addition of sugar (sucrose), spices and a vinegar. It conforms in name to the fruit used and in its preparation at least nine (9) pounds of fruit is used to each eleven (11) pounds of sugar.

10. *Marmalade* is the sound product made from clean, sound, properly matured and prepared fresh fruit, by boiling to a pulpy, semi-solid consistence after addition of sugar (sucrose), with or without spices and a vinegar. It conforms in name to the fruit used.

11. *Marmalade with glucose, marmalade with corn sirup*, is the sound product made from clean, sound, properly matured and prepared fresh fruit, by boiling to a pulpy, semi-solid consistency after addition of glucose (corn sirup), with or without the addition of sugar (sucrose), spices and a vinegar. It conforms in name to the fruit used.

12. *Preserve* is the sound product made from clean, sound, properly matured and prepared fresh fruit and sugar (sucrose), with or without spices and a vinegar and conforms in name to the fruit used.

13. *Preserve with glucose, preserve with corn sirup*, is the sound product made from clean, sound, properly matured and prepared fresh fruit with glucose (corn sirup), with or without the addition of sugar (sucrose) and spices and a vinegar. It conforms in name to the fruit used.

14. *Fruit butter* is the sound product made from fruit juice and clean, sound, properly matured and prepared fruit evaporated to a semi-solid mass of homogeneous consistency, with or without the addition

of sugar (sucrose) and spices and a vinegar. It conforms in name to the fruit used.

15. *Fruit butter with glucose, fruit butter with corn sirup*, is the sound product made from fruit juice and clean, sound, properly matured and prepared fruit evaporated to a semi-solid mass of homogeneous consistency, with the addition of glucose (corn sirup) and with or without the addition of sugar (sucrose) and spices and a vinegar. It conforms in name to the fruit used.

FIRST GENERAL STATEMENT.

When unripe fruit, dried fruit, evaporated fruit, preserved fruit, canned fruit, or trimming stock, which is either fresh, dried or preserved, or similar products are used in the place of whole, clean, sound, properly matured and prepared fresh fruit in the manufacture of jelly, jam, marmalade, preserve or fruit butter, the product is not considered to be a fruit jelly, jam, marmalade, preserve or butter without qualification. If, however, the label bears a plain and conspicuous statement that the product is made from unripe fruit, dried fruit, evaporated fruit, canned fruit, preserved fruit or trimming stock, either fresh, dried or preserved, or similar product, as the fact may be in any particular case, and if this statement is placed upon the label in immediate connection with the name of the article, this department will offer no objection at the present time.

SECOND GENERAL STATEMENT.

If so-called "jelly acid" or acid of any kind is added in the manufacture of fruit jelly, jam or marmalade, the product is not considered to be a fruit jelly, jam or marmalade without qualification. However, this department will not object at the present time to the addition of pure citric, lactic or tartaric acid in such amount as is necessary to the best jelling condition of the fruit pectin, if the label bears a plain and conspicuous statement that citric, lactic or tartaric acid (as the case may be) has been added and this statement is placed upon the label in immediate connection with the name of the article.

Meeting of Retail Confectioners.

The convention of the Associated Retail Confectioners of the United States was held at the Hotel Statler, Detroit, Mich., April 16th, 17th and 18th, President F. H. Weiss of Cincinnati presiding. An address of welcome was delivered by District Attorney Lee on behalf of the Mayor of Detroit. Mr. W. C. Hughes, secretary-treasurer of the National Confectioners' Association, made an effective and practical talk. Among others who spoke were: Conrad Spoehr, Chicago; Chas. G. Mullane, Cincinnati; C. W. Craig, Indianapolis; Clyde L. Ivey, Minneapolis; Le Roy Dougherty, Kankakee, Illinois; and Mrs. Snyder, Chicago.

The convention was well attended by representative men engaged in the retail candy trade from many sections of the United States, and was considered successful in every way. The officers chosen for the ensuing year are: Charles G. Mullane of Mullane's, president, Cincinnati; W. J. Brown of Brown's, vice-president, Detroit; S. W. Duffy of De Klyn's, Cleveland, second vice-president; C. W. Craig of Craig's, Indianapolis, treasurer; Conrad Spoehr of Spoehr's, Chicago, secretary. The president appoints the members of the executive committee.

Commissioner Foust Says License Fee Benefits Oleomargarine in Pennsylvania.

Referring to the recent comment advocating the elimination or reduction of license fees required of retail oleomargarine dealers, Dairy and Food Commissioner James Foust states that there are many reasons why the fee should not be eliminated or reduced.

"Years ago," he said, "prosecutions were made in practically every county of the state for violations of the law. In Allegheny alone five hundred cases were pending at one time against moonshiners and the other oleo crooks. There was so much odium connected with the sale of oleo that the people not only were afraid to buy it but mistrusted eating it. This has all been eliminated. The business has been taken out of the hands of unscrupulous dealers and placed in the hands of reputable merchants. At the present time many of the largest and best stores in Pennsylvania are handling oleomargarine. There is ten times as much consumed in the state as there was six years ago.

"Forty-two hundred licenses were issued during the past year and every city, town and hamlet has it on sale. If the license and all tax were taken off oleo, it would not reduce the cost one-eighth of a cent a pound to the consumer, as this tax and license does not amount on the average to one-eighth of a cent for each pound sold.

"The price of oleomargarine is regulated by the demand and price of butter. In Philipsburg, N. J., just across the river from Easton, oleomargarine is retailed at exactly the same price that it is sold in Easton. The state of New Jersey requires no license and this fact does not reduce the price there."

Commissioner Foust further declared that if the license were eliminated or reduced to a small fee, an irresponsible class of people would engage in the business. They would not be able to understand the comprehensive law and some would not want to, with the result that we will be going back to the days of many violations and prosecutions. The courts of the different counties throughout the Commonwealth would have to spend five times as much as the fees amount to in trying a class of poor people for violation of the law. The business of retailing oleomargarine would become discredited and the consuming public would be afraid to eat it.

Commissioner Foust added that the appropriation of the Dairy and Food Bureau would have to be many times larger, with an enormous force of agents to apprehend violators.

Another proof that the license fee does not interfere with the sale or consumption of oleo is that there is twice as much oleomargarine sold in Pennsylvania per capita as in any other state of the Union.

Crackers Baked with Corn Oil and Rye.

For years, cracker bakers have thought that only animal fat could be successfully used as shortening in their products, it being believed that vegetable fats, such as lard compound, corn oil, and peanut oil would not make crackers which would keep in hot weather. For 10 months, however, a cracker baking concern in Terre Haute, Ind., has been making commercial goods with 13 pounds of corn oil to the barrel of flour instead of an equal weight of lard, and also using 25 per cent rye flour to 75 per cent wheat. These goods went through the hot season last summer without trouble, thus destroying what was practically a myth of the cracker-baking trade. The rye mixture produces a soda cracker and saltine in no respect darker than a straight wheat article. Barley flour is also suitable for cracker baking, and in this connection it is interesting to know that figures recently gathered by the Baking Division of the Food Administration show that more than 150,000 barrels of barley flour are being milled in this country daily, whereas a few months ago only one mill was making barley flour in a very small way.

RETAIL PRICES

Average Price per Pound	Average Price per 100 Calories		Lima, Ohio	Augusta, Me.	Concord, N. H.	Newark, Del.	Trenton, N. J.	Philadelphia, Pa.	Richmond, Va.	New York, N. Y.	Wheeling, W. Va.	Raleigh, N. C.	Columbia, S. C.	Atlanta, Ga.	Pittsburgh, Pa.
CEREAL PRODUCTS															
6.4	.49	Wheat Flour, War Std., 49 lb. bag.....	330	330	325	332	320	360	310	340	300	340	330	.....	300
7.8	.49	Rye Flour, Std., 24½ lb. bag.....	195	221	200	.....	220	225	.....	170	170	190	165	200	196
7.4	.45	Graham Flour, 10 lb. bag.....	70	80	75	.....	90	80	.....	80	65	90	75	80	85
11.4	.70	Corn Starch, lb.	12½	12	12	10	10	12	10	9	10	15	12½	12	9
8.3	.52	Corn Flour, 5 lb. bag.....	40	45	40	40	40	50	35	40	38	.....	.....	.....	50
7.0	.43	Corn Meal, lb.	7	7½	7½	6½	7	8	6	7½	7	7	6	6	6
8.8	.53	Barley Flour, lb.....	10	9	10	8	7½	10	8	8	8	9	.....	.....	9
9.3	.51	Oat Meal, lb.	12	9	10	7	8	10	.....	7	8	15	10	8	7
8.7	.48	Oats, Rolled, Bulk, lb.....	10	8	9	7	8	10	8	7	8	.....	.....	.....	7
13.0	.79	Rice Flour, lb.	15	14	15	.....	15	15	11½	12	12	.....	.....	.....	13
10.3	.65	Buckwheat Flour, lb.	10	9	12	.....	9	11	10	9	10	12	10	10	8
9.0	.56	Hominy Grits, lb.	11	.....	10	.....	8	10	7½	8	.....	12	7	8	10
10.4	.57	Armour's Oats, 1 lb. 4 oz.....	13	.....	.....	.....	.....	14	12	14	12	.....	15	.....	12
11.5	.64	Purity Oats, 1 lb.	13	13	9	.....	10	12	12	13	10	13	15	.....	12
10.1	.56	Quaker Oats, 1 lb. 4 oz.....	13	13	12	8	11	14	12	10	12	15	15	12	11
12.7	.80	Rice, Fancy, Head, lb.....	15	12	13	13	13	14	12½	10	13	.....	12	12½	11
12.0	.74	Barley, Pearled, lb.....	15	15	15	7	8	10	15	8	8	15	15	7	8
9.7	.82	Bread, lb.	10	10	10	8	9	8	10	10	10	10	10	10	8
21.0	1.11	Crackers, Graham, lb.	22	22	25	18	22	22	25	20	22	15	20	25	16
21.6	1.12	Crackers, Oatmeal, lb.	20	28	25	.....	22	22	.....	20	22	30	20	.....	16
13.8	.85	Macaroni, lb.	15	18	15	10	14	18	15	16	13	15	15	20	10
SUGAR, SYRUP AND MISC.															
9.0	.49	Granulated Sugar, lb.	9	10	9	8½	8½	8½	9½	8	9	9½	9	9	9
8.9	.62	Corn Sirup, 10 lb. pail.....	100	85	.....	80	.....	.....	85	100	75	100	100	79	...
26.9	1.82	Comb Honey, lb.	28	.....	40	25	30	35	23	30	32	25	20	30	25
32.2	1.43	Cocoa, Bulk, lb.	35	.....	35	30	25	25	35	20	30	40	.....	.....	25
26.7	4.45	Eggs, fresh gathered, firsts, doz.....	40	45	50	38	45	45	40	55	38	40	45	38	40
6.2	2.00	Milk, qt.	13	12	12	12	14	28	15	11	14	20	17½	.....	15
33.9	1.63	Cheese, American Cheddar, lb.....	35	35	35	29	35	28	33	35	35	35	35	30	34
FATS															
53.2	2.24	Bacon, Sliced, lb.	60	50	60	58	55	55	45	48	48	65	58	48	50
50.6	1.45	Creamery Butter, Fancy, lb.....	53	55	60	49	54	55	57	52	52	60	55	51	47
33.0	.81	Pure Leaf Lard, lb.....	35	34	35	30	33	34	33	35	32	35	33	28	29
34.6	1.01	Oleomargarine, Uncolored, lb.....	35	35	35	30	35	36	32	30	38	40	40	35	33
34.4	.98	Nut Margarine, Uncolored, lb.....	35	35	35	39	32	34	35	30	32	40	.....	35	34
79.9	2.00	Italian or Spanish Olive Oil, qt.....	200	150	175	140	160	150	150	140	150	100	200	100	135
34.0	.85	Cottonseed Oil, qt.	85	81	.....	.....	65	75	40	50	.....	90½	90	75	60
36.4	.91	Corn Oil, qt.	75	80	.....	.....	75	75	.....	60	65	.....	.....	75	...
38.1	.95	Peanut Oil, qt. ....	.....	.....	.....	.....	.....	70	.....	60	.....	.....	85	.....	...
28.9	1.05	Peanut Butter, lb.	30	28	30	23	24	35	30	30	30	35	.....	35	23
FRUITS AND VEGETABLES															
19.8	1.50	Evaporated Apples, lb. ....	.....	.....	30	.....	25	20	17	20	20	25	20	17½	25
17.2	1.43	Evaporated Peaches, lb.	20	20	30	14	15	20	15	15	19	25	16	15	21
13.9	6.62	Canned Peaches, No. 2½, Std., 29 oz....	25	25	35	15	23	30	20	20	25	35	25	25	18
15.0	2.14	Canned Pineapples, No. 2½, Std., 30 oz....	30	25	40	16	30	30	20	28	28	30	25	35	30
15.7	1.01	Raisins, Seeded, per pkg., 15 oz.....	15	14	15	15	12	15	15	14	15	20	18	15	12
15.6	1.34	Prunes, Medium Size, lb.....	20	15	15	12	15	18	12½	15	15	20	16	15	12
2.3	.77	White Potatoes, lb.....	2½	2⅓	2½	1½	2	2	2	7½	2	2⅔	2½	2½	1
7.6	1.69	Sweet Potatoes, lb.	15	.....	.....	.....	10	6	5½	10½	.....	.....	5	5	5
3.9	1.95	Onions, lb.	5	4	4	4½	3	2	4	5	3	.....	5	5	7
17.5	1.11	Navy Beans, dry, lb.....	20	17	18	15	18	16	18	17	16	.....	20	17½	17
13.7	15.22	String Beans, Cnd., No. 2, Std., 19 oz....	20	15	20	16	16	20	17	13	15	15	.....	.....	15
12.9	2.93	Corn, Canned, No. 2, Std., 20 oz.....	13	17½	20	15	16	20	15	18	15	25	18	17½	16
13.5	5.40	Peas, Canned, No. 2, Std., 20 oz.....	18	18½	20	16	16	20	15	14	15	35	20	20	14
15.4	.96	Split Peas, lb. ....	.....	15	15	16	20	20	15	13	15	.....	15	.....	14
21.9	1.18	Peanuts, unshelled, lb.....	.....	20	.....	15	25	20	.....	18	.....	.....	.....	.....	18
9.2	9.20	Tomatoes, Cnd., No. 3, Std., 33 oz.....	15	20	25	19	19	25	19	20	22	20	20	18	19
5.9	4.92	Cabbage, lb.	8	5	8	10	5	4	5	7	6	7½	5	4	4
4.1	2.41	Beets, lb.	3	5	8	.....	3	4	.....	3	.....	.....	.....	5	4
4.0	2.22	Turnips, lb.	5	3	8	.....	3	4	.....	2	.....	.....	6	5	4
MEATS AND FISH															
36.3	5.58	Beef, Round Steak, lb.....	40	45	45	42	45	45	38	40	.....	40	38	35	40
38.5	7.70	Veal Cutlets, lb.....	50	45	45	45	48	45	45	48	.....	45	45	35	40
36.4	4.18	Leg of Mutton, lb.....	35	.....	.....	40	42	33	45	30	.....	50	.....	40	40
39.4	4.69	Leg of Lamb, lb.....	40	40	40	40	42	40	45	40	.....	50	35	40	45
36.5	2.97	Pork Chops, lb.....	38	34	35	42	38	40	40	40	38	40	38	35	36
48.0	2.53	Ham, Sliced, medium fat, lb.....	50	45	45	40	50	48	40	60	45	50	65	40	50
46.6	16.07	Chickens, Broilers, lb.	45	40	40	38	43	90	45	50	.....	40	50	.....	50
24.6	6.83	Salt Cod, lb.	25	.....	30	16	24	25	15	30	.....	30	30	30	20
25.7	2.57	Salt Mackerel, lb.	25	20	22	22	28	28	25	27½	23	25	.....	25	27
30.8	6.84	Halibut, lb.	35	36	45	.....	45	40	.....	35	.....	.....	.....	.....	30
31.2	4.87	Salmon, fresh, lb.	32	32	38	18	.....	50	.....	30	.....	35	.....	.....	40
27.3	4.14	Salmon, canned, No. 1, tall, 1 lb.....	30	30	30	25	25	30	30	25	28	25	30	30	20

MAY 1, 1918

	Nashville, Tenn.	New Orleans, La.	Austin, Tex.	Little Rock, Ark.	Chicago, Ill.	Detroit, Mich.	Madison, Wis.	St. Paul, Minn.	Des Moines, Iowa	Lexington, Ky.	Fargo, N. D.	Siox Falls, S. D.	Tepeka, Kans.	Denver, Colo.	Helena, Mont.	Reno, Nev.	Seattle, Wash.	Portland, Ore.	Los Angeles, Cal.	San Fran- cisco, Cal.
43	320	340	350	300	295	298	305	290	290	330	290	325	300	275	325	285	280	270	300	295
.....	160	195	175	160	165	183	210	190	200	170	170	230	220	.....	240	210	165	175	181	180
75	70	90	80	85	70	62½	85	65	70	80	65	75	60	75	80	70	65	65	63	73
14	7½	15	11	11	11	10	12	11	10	15	13	12	9	12	15	12½	11	10	11	10
40	45	40	40	.....	45	34	45	35	40	40	40	45	37½	35	45	45	41	40	46	45
7	5	6	6	6	7	7	8½	7	7	7	8	7½	6	6	8	8½	7½	10	7	7½
7½	9	8	11	.....	8	9	10	8	9	.....	9	9	10	9	9	10	8½	8	9	8
10	10	8	10	9	10	7½	8½	10	9	10	8	8½	10	11	9½	10	10	8	10	12
8½	10	8	10	9	8	7½	8½	8	.....	9	8½	8½	.....	12½	9½	10	10	8	8½	8
12½	.....	12	12½	.....	13	12	13	12½	12	15	13	13	13	12	.....	15	12½	12½	11	10
12	12½	9	12½	.....	10	10	10	.....	.....	8	10	9	.....	12	8	11½	9	12	12½	12
.....	7	6	10	6	7	8½	9	15	10	8½	10	9½	.....	10	8	9	8½	8½	9	9
.....	12	12	.....	11	12	13	15	12	12½	10	15	15	.....	13	15	.....	15	.....	.....	15
.....	10	12	12	10	10	.....	.....	10	12½	10	10	9	.....	13	.....	.....	.....	.....	.....	15
12	10	12	12	11	12	13	15	12	12½	15	15	15	.....	13	15	.....	12	15	12½	14
15	10	11	15	10	13	12	13	12½	15	12½	15	13	12½	12½	12½	13	15	12½	12½	12
13	12	10	15	15	12	8	15	12	20	15	10	10	.....	12½	12½	13	10	12½	10	12½
10	10	9	10	10	9	9	10	8	10	10	15	10	10	10	12½	10	10	10	8	7½
22	16	20	20	20	20	22	20	22	22	25	15	22	20	25	.....	20	20	20	20	25
22	16	20	.....	20	20	22	20	22	22	25	15	22	20	25	.....	20	.....	.....	20	25
12½	8	12½	20	10	15	18	12	12½	.....	15	13	15	18	.....	15	12½	10	10	11	10
9	8	8½	10	9	9	8½	9	9½	9	9	9	10	9½	9	10	9	8½	8	8	9
75	70	90	85	70	59	.....	85	80	90	85	90	90	85	.....	190	85	87	100	87	95
30	30	30	25	20	35	.....	25	25	25	30	30	25	25	23	20	20	25	27½	18	30
35	28	30	50	35	25	25	.....	25	.....	40	50	50	25	.....	40	45	27	25	22½	30
38	35	35	40	35	41	41	36	38	35	35	30	35	35	40	45	40	42	40	40	45
11	12	15	16	16	13	13	10	9	13	14	12	10	10	11	12	10	10	12	.....	12
39	30	32	35	34	35	30	31½	32	35	40	35	35	30	40	35	35	27½	30	30	45
48	45	50	55	48	50	50	55	.....	50	55	55	53	60	55	60	60	50	50	62	55
45	45	48	55	50	49	47	49	47	50	55	46	45	45	50	55	50	48	50	46	45
32	32	31	35	34	32	35	35	32	35	35	35	32	32	40	30	35	.....	35	32	30
35	30	32½	40	31	35	31	32	32	30	35	35	35	32	35	40	40	35	35	35	38
33	30	35	.....	38	33	33	34	32	33	35	35	30	32	30	40	45	35	35	35	.....
.....	165	150	125	150	140	185	200	130	.....	175	150	140	150	225	.....	135	140	.....	105	160
43	70	45	69	.....	77½	87	70	40	70	.....	.....	40	50	85	75	60	60	60	.....	50
69	.....	65	.....	.....	76	74	70	40	75	65	65	65	.....	75	75	75	65	75	63	72
.....	.....	65	65	.....	.....	.....	.....	.....	.....	.....	.....	.....	52½	.....	85	.....	.....	.....	.....	100
35	25	30	30	25	25	30	35	22	.....	30	40	25	25	40	25	25	17½	25	25	30
24	15	20	20	15	.....	25	.....	.....	.....	20	18	.....	.....	20	12½	17	20	17½	20	12½
18	12½	17½	17	15	18	15	20	18	15	15	18	18	15	12½	15	17	15	15	15	12½
25	28	25	25	20	30	24	25	25	25	30	30	28	27	25	25	25	25	15	20	25
30	28	25	30	30	25	.....	35	25	30	30	35	28	30	25	25	25	25	25	21	25
15	12	13	20	15	15	14	15	12½	15	15	15	15	15	15	15	14	12½	12½	13	12½
19	12½	12½	20	13	18	15	17½	15	15	15	18	18	14	20	15	12	12½	14	14	15
2	2	3	2½	2½	2	2	2	1½	2	2½	1½	1¼	6¼	1½	1½	1	1½	1¼	2	2½
.....	5	6	.....	6	10	.....	.....	.....	12½	5	.....	10	.....	10	.....	10	.....	.....	5	2½
6	5	3	5	3	4	3	5	2	2½	5	5	5	7½	2	4	1½	3½	1½	1½	2
19	14	16	18	18	19	17	18	17½	18	18	20	18	17½	17½	17½	17	16	15	16	17½
23	13	20	15	18	18	17	18	15	12½	15	18	18	14	15	15	14	15	14	12½	15
15	13	15	15	15	15	17	17½	15	10	20	18	15	15	15	15	14	15	14	12	17
15	13	15	17½	15	16	17	19	15	12½	20	15	15	18	20	15	14	15	14	11	18
23	15	15	20	.....	15	14	18	15	10	15	13	15	20	15	15	14	15	12½	12	14
23	18	15	.....	15	25	25	25	20	25	.....	30	20	.....	25	20	30	20	22	23	25
21	14	17½	20	18	23	20	20	18	16	20	18	20	20	20	17½	18	15	15	11	15
6	3	2	5	6	7	7	8	6	7	5	8½	6	7½	7	6	4½	7	.....	3	.....
.....	4	4	.....	6	3	5	5	.....	.....	.....	.....	.....	.....	1½	.....	2	.....	2	.....	5
.....	5	4	.....	5	3	3	5	2	.....	.....	5	4	.....	2	.....	2	.....	.....	.....	5
32	40	33	35	40	28	34	28	35	35	35	35	28	40	40	32	30	40	28	28	35
32	35	40	35	30	35	45	30	30	35	40	30	25	35	45	35	40	35	25	45	35
.....	40	35	30	40	28	35	35	.....	35	35	40	30	50	40	35	28	.....	30	32½	30
.....	45	38	30	40	35	38	38	35	40	40	40	35	50	35	.....	35	40	40	35	35
30	40	40	35	35	37½	35	30	33	35	35	35	30	32	35	40	35	40	35	40	40
47	50	40	45	50	45	45	45	50	45	45	45	40	60	35	45	50	50	50	50	60
45	.....	55	.....	50	38	.....	.....	.....	35	.....	35	.....	.....	.....	.....	40	42	60	35	60
31	.....	20	.....	35	30	25	.....	20	20	.....	20	30	.....	30	25	.....	15	20	24	15
25	22	20	.....	35	25	30	25	22½	30	.....	30	25	25	30	.....	.....	25	20	.....	30
30	.....	25	.....	35	30	30	25	28	30	30	30	30	28	30	25	35	25	25	20	25
30	.....	25	.....	.....	30	30	28	.....	30	30	40	28	.....	35	35	35	25	20	25	25
30	17	22½	30	20	30	25	19	28	30	30	35	33	32	25	17½	30	30	25	.....	30

Federal Trade Commission Reports on Wheat-Flour Milling and Jobbing

THE first installment of the report of the Federal Trade Commission's general food investigation has been completed, and the report is in the hands of the President. It is that part of the investigation dealing with wheat-flour milling and wheat-flour jobbing. Further installments, dealing with the packing industry and other branches of the food-supplying industries, will follow in the future. The main subjects covered in this investigation were: costs and profits of millers and distributors of wheat flour for the last five years; marketing conditions and practices of millers and distributors of wheat flour.

It is specifically stated that the report does not include conditions and practices in the retail flour trade.

The report states that the net profits made by millers increased from 11 cents a barrel in the crop year of 1912-13 to 52 cents a barrel in the crop year of 1916-17. The gross profits of car-lot distributors increased from 22 cents a barrel in the calendar year 1914 to 55 cents a barrel in the first half of the calendar year 1917. The gross profits of small-lot jobbers increased from 52 cents a barrel for the calendar year 1914 to 86 cents a barrel in the first half of 1917.

The investigation was a part of the general food investigation made by the Federal Trade Commission by direction of the President. The results of the investigations have been communicated to the United States Food Administration from time to time, and this report in particular has had the most careful consideration of the various officials who have to do with this subject.

Following are detailed the principal findings of fact as the result of the investigation into wheat-flour milling and jobbing:

1. There are about 7,000 merchant wheat-flour mills in the country, which have produced for the last three years an average of 116,000,000 barrels of flour annually, but which have capacity sufficient to about double this output. In grinding this flour about 550,000,000 bushels of wheat have been used each year.

2. The simple process of milling and the comparatively low cost of milling equipment have resulted in the erection of a large number of small mills throughout the country. In certain favorably located centers, though, the mills of large capacity have developed, which have some advantages over the small mills in economy of production, but some disadvantages in cost of distribution. In recent years the larger mills have increased in number, while the number of smaller ones has decreased.

3. At least half of the nation's flour output is marketed at points distant from the place of manufacture, many of the larger concerns having established branch houses at distant points through which from 30 to 60 per cent of their output is sold, the remainder going to wholesale grocers and jobbers. The smaller millers distribute most of their output, exclusive of local sales, through jobbers and brokers, making very small use of the branch house method.

4. The average cost of production of a barrel of flour for mills covered by the investigation increased in the crop year 1916-17 over the preceding year, due mainly to the increased cost of wheat, while operating

profits per barrel as shown by their records increased nearly 175 per cent and their rate of profit on investment increased more than 100 per cent. The increase in profits was due in part to the increased value of unsold stocks carried over from the preceding year and disposed of on a rising market, and also to speculative profits on feed, the prices of which increased greatly during the year.

Profits in 1912-13.

5. During the fiscal year 1912-13, a fairly normal year, the average net profit of mills covered by the investigation was 11 cents a barrel, yielding nearly 10 per cent on the investment. During the fiscal year 1913-14, when closing inventories were affected by European conditions, the average net profit was 16 cents a barrel, yielding 13 per cent on the investment. Under present regulations, millers are allowed a maximum profit of 25 cents a barrel on flour sales, and also 50 cents a ton on feed sales, equivalent to about 1.7 cents per barrel of flour additional.

6. Expenses of flour distributors and middlemen covered by the investigation increased somewhat in the first half of 1917 over the preceding year, while their profits, gross and net, showed a very large increase. The average net profit per barrel for several large car-lot jobbers increased more than 125 per cent, the average rate of profit on investment nearly doubling. The average net profit of various small-lot jobbers and the average rate of profit on their investment showed a similar increase.

7. The average gross profits of car-lot distributors in 1914 was 22 cents a barrel, and in 1915 half a cent less. The average gross profit of small-lot jobbers was 52 cents in 1914 and 51 cents in 1915. Both were fairly normal years for flour jobbers. Under present regulations the maximum gross profit of car-lot distributors is fixed at 25 cents, and of small-lot distributors at from 50 to 75 cents a barrel.

Competition Curbed by War.

8. Since the outbreak of the European war the keen competition which formerly existed in the milling industry has been restricted somewhat by the resultant abnormal conditions. Such competitive practices as operation of unidentified controlled companies, forward selling, and guaranteeing customers against price declines, etc., have been discontinued voluntarily or are prevented by the present regulations. Association activities appear to have affected competition locally in some instances.

9. The price of flour to the public has been affected by these two factors:

- (a) Fixation of the price of wheat by the Government, with the consequent elimination of speculation.

- (b) Regulation of flour millers' profits by the Food Administration.

The report states, though, that the present regulation of flour millers' profits at a fixed margin above cost has the inherent weakness of not encouraging efficiency in production and of affording unpatriotic millers temptation to dishonesty in cost accounting, difficult to detect or prevent.

Profit Prospects This Year.

While the actual profit which millers will make dur-

ing the present crop year cannot be finally determined until the end of the period, it appears from the information in the hands of the Federal Trade Commission that the regulations have reduced the profits of most mills below those made during the year 1916-17. This, with the larger reductions secured by fixing the price of wheat—a part of the regulatory plan—has reduced the price of flour to the consumer several dollars a barrel. Wheat and milling regulations have kept flour prices fairly stable in spite of an increasing shortage, due to heavy shipments abroad.

10. Regulations for governing flour jobbers' profits are free from the weaknesses inherent in the regulations for the millers, since they fix only the gross profits that may be made, leaving the jobber free to earn what he can by efficient operation. The margin allowed the jobbers is more nearly in the line with their average margin under normal conditions than is the 25 cents a barrel allowed the millers. As stated in the report, this 25 cents a barrel is the maximum, but taken in connection with the less than normal volume of output is regarded by many millers as "allowable."

11. Consideration is now being given by the Food Administration to the improvement of the present regulations of millers' profits in the light of the experience already gained. The report states that it is the opinion of the Federal Trade Commission that maximum prices of flour might be established, which would cover the cost of wheat and all manufacturing, selling, and general expenses, and in addition would give the miller a reasonable profit. The standardization of flour by the Food Administration renders the plan of fixing flour prices much easier of accomplishment than heretofore. Maximum prices for different sections of the country would, of course, recognize differences in the cost of wheat and also in the other costs of large and small mills. This would make it profitable to the millers to operate more efficiently and keep costs down.

12. The Food Administration has created an enforcement division, whose duty it is to prevent infrac-

tions of the regulations and rules and prevent profiteering, and this division has accomplished positive results already. The Federal Trade Commission is co-operating with this division in checking up the accounts of flour millers. The results of its investigations will be made public in the future.

Summary of Costs and Profits of Flour.

MILLING FOR FISCAL OR CROP YEARS 1912-13 TO 1916-17.

Year.	1912-13.	1913-14.	1914-15.	1915-16	1916-17.
Number of mills	118	128	133	132	128
Flour produced (in 1,000 barrels)	11,828	45,639	45,726	51,560	43,146
Feed produced (in 1,000 tons)	1,475	1,638	1,708	1,978	1,786
Wheat used (in 100,000 bushels)	1,867	2,026	2,071	2,349	1,988
Cost of wheat used per bushel	\$0.89	\$0.89	\$1.20	\$1.11	\$1.79
Cost per barrel of flour.					
Wheat	\$3.97	\$3.93	\$5.45	\$5.03	\$8.22
Packages .....	.26	.26	.23	.24	.30
Operating and repairs ..	.19	.19	.19	.19	.24
General expenses .....	.09	.09	.10	.10	.13
Selling expenses .....	.19	.20	.21	.21	.27
Total	\$4.70	\$4.67	\$6.18	\$5.77	\$9.16
Depreciation at 3 cents per barrel .....	.03	.03	.03	.03	.03
Total cost of flour and feed	\$4.73	\$4.70	\$6.21	\$5.80	\$9.19
Less value of feed produced .....	.69	.77	.85	.78	1.23
Net cost of flour produced	\$4.04	\$3.93	\$5.36	\$5.02	\$7.96
Sales and profits per barrel of flour.					
Net sales	\$4.20	\$4.11	\$5.56	\$5.26	\$8.34
Cost of sales, including general and selling expense ¹	4.06	3.92	5.31	5.05	7.77
Profit	\$0.14	\$0.19	\$0.25	\$0.21	\$0.57
Less interest (except bond) ..	.03	.03	.03	.02	.05
Net operating profit ..	\$0.11	\$0.16	\$0.22	\$0.19	\$0.52
Rate of operating profit on net sales, per cent. ..	2.7	3.9	3.8	3.7	6.2
Investment per barrel ² ..	\$1.21	\$1.23	\$1.35	\$1.28	\$1.63
Rates of profit on investment, per cent	9.4	13.2	15.8	15.1	31.8

¹This is the net cost of flour produced, taking into account the difference between the opening and closing flour inventories and also including gains or losses on unfilled orders.

²The investment per barrel of flour as revised by the commission is the average investment for the year after deducting all outside investments where shown and also good will, trademarks, brands, etc., but including the value of rented plants.

Louisiana Sugar Cane Acreage, 1918.

The total acreage in sugar cane in the twenty-four sugar parishes of Louisiana in 1918 is estimated by the Bureau of Crop Estimates, U. S. Department of Agriculture, at 280,000 acres, as compared with 293,000 in 1917, and 315,000 in 1909. The entire state, including parishes outside the sugar belt, had in 1909 an area of about 330,000 acres in sugar cane. The estimates for 1918 are based upon reports made from a well-selected list of over 300 cane growers, to the bureau's Louisiana field agent.

About 58 per cent of the 1918 acreage is estimated to be in "plant" cane (planted since last harvest), and the remainder "stubble" cane (plantings of last year or earlier).

Growers generally mention more or less damage to seed cane caused by the extreme dryness last fall and the several freezes during the winter months, though not a few of them say it is yet too early to hazard more than a guess as to the extent of damage done, if any. The cane belt as a whole will hardly average over 4 per cent damage to plant and less than 7 per cent to stubble cane, according to growers' reports.

Decreases in acreage in 1918 compared with 1917 were chiefly in the western portion of the cane belt where the small cane growers turned their attention to other crops, principally cotton, corn, and rice.

To Stop Traffic In Canned Spinach Adulterated With Water.

The U. S. Department of Agriculture announces that it will take steps to prevent certain packers from shipping interstate canned spinach containing excessive amounts of brine. Purchasers of such an adulterated product are required to pay food prices for extra salt water. The practice also wastes cans and uses excessive transportation space.

Good canning practice prescribes that spinach should be packed solid without more liquid than is necessary in processing. Loading with excess water, fortunately, officials state, is the exception.

Hard Cider Is an Intoxicant.

The Appellate Division of the Supreme Court in Brooklyn, N. Y., decided on April 12 that hard cider is an intoxicating beverage and cannot be sold without payment of the liquor tax. The decision was rendered in the case of a delicatessen storekeeper who sold two glasses of cider to a policeman.

Attorneys for the defendant dipped into Roman and Greek history to prove that for 2,000 years cider had been considered a non-intoxicating beverage. They used five feet of dictionaries to bolster their contention, but a modern analysis indicated that there was 6.3 per cent alcohol in the cider.

Penalties Under Food Control Act

The Chatham Grain Co., of Chatham, N. Y., has been found guilty of violating the Food Administration wheat-flour regulations on three counts and will pay \$1,500 to the local chapter of the Red Cross in lieu of other penalty.

The company was convicted of selling wheat flour to grocers without the required amounts of wheat substitutes, charging retailers margins of profits in excess of the regulations, and selling to individual consumers more than one-fourth barrel of flour at a time.

In view of certain extenuating circumstances, the proposal of the company that it make the contribution to the Red Cross instead of having its license revoked was accepted.

The license of the Farmers' Co-operative Mercantile Co., a Scribner, Nebr., mill, has been revoked for 30 days after a hearing before the food administrator of Nebraska. The offense was the sale of flour without substitutes or certification, which was admitted by the mill officials.

The offense was aggravated by the fact that in January the mill was cited for excessive sales of flour, but was released on promise to live up to the United States Food Administration's regulations strictly thereafter.

The license will be reissued at the expiration of the penalty period, provided in the meantime the rules and regulations of the Food Administration and of the federal food administrator are followed.

S. S. Bishop, a retail grocer at Conroy, Iowa, has been permitted to resume business, the Food Administration announces. An order prohibiting licensed wholesalers from doing business with Bishop was put into effect on February 15, after he had been found guilty of selling flour in more than reasonable quantities. On recommendation of the food administrator for Iowa, this order has been rescinded, Bishop having made proper amends for his excessive sales and having given assurance that in the future he will observe all rules and regulations of the Food Administration. Licensed wholesalers are being notified to resume sales to him.

The Pasadena Milling Co., Pasadena, Cal., with a capacity of 100 barrels a day, was ordered by the Food Administration to suspend operations until May 1. This action was taken by the Food Administration on joint recommendation of the California administrator and the chairman of the South Pacific Coast Milling Division of the Food Administration.

At a hearing in San Francisco it was shown that until very recently this mill had been doing business without a license. The evidence indicated that their failure to take out a license was due to carelessness.

The Food Administration announces that the license requirements have been given such wide publicity that hereafter firms continuing to do business without a license are to be dealt with more severely.

The license of Albert B. Bauss, a baker at Conneaut, Ohio, has been revoked. At a hearing before the food administrator for Ohio, it was shown that during the month of March Bauss used only about 5 per cent substitutes in his bread instead of the required 20 per cent.

Bauss was notified that his license would be renewed April 20, on application to the Ohio Food Administrator, if in the meantime he proved himself ready fully to comply with the regulations.

The Food Administration has ordered a carload of

flour held by the Home Baking Co., Butte, Mont., returned to the Royal Milling Co., Great Falls, Mont. This exceeded the amount allowed to be held under the Food Administration regulations.

The Food Administration also ordered 8,000 pounds excessive flour to be returned by the Manhattan Bakery, and also one-half carload to be returned by the Union Bakery, both of Butte, Mont. These returns are to be made to the Montana Flour Mills Co., Harlowton, Mont.

The first violation of the Food Administration's regulations in Porto Rico has been reported to Washington. Marquez Bros., of Arecibo, have been found guilty of having charged excessive prices for flour.

The case was reviewed by Albert E. Lee, federal food administrator of Porto Rico, who ordered the offender to refund all excess profits, and to turn over to the Porto Rico Chapter of the Red Cross \$150, which amount was found to cover profits made on sales to unknown customers to whom refunds could not be made. The firm also was ordered to post a notice of the order upon its warehouse.

For selling flour without substitutes and for failing to respond to a summons issued by a representative of the federal food administrator for Iowa, the retailer's license of Hall Roberts' Son, Postville, Iowa, has been revoked by the Food Administration.

Hall Roberts' Son do a retail business in excess of \$100,000 a year, and consequently must have a retailer's license. The firm has been allowed to retain its elevator license. Besides closing the retail business for the period of the war the firm was required to apologize publicly to the federal food administration of Iowa for its conduct in the sale of flour and to donate \$500 to the American Red Cross.

The Food Administration has refused to issue a license to Joseph Schwertner, of Wilcox, Ariz., following a hearing on the charge of hoarding flour and violations of the "fifty-fifty" rule. He was found to be holding 60,000 pounds of wheat flour.

Schwertner has agreed to dispose of all of his stocks of licensed commodities within a month and to turn over voluntarily to the Government the 60,000 pounds of flour, as well as 23 sacks of cane sugar, which he had in stock.

For failure to use the proper amount of substitutes in bread, G. Kromer, a baker in Huntington, Pa., has been forced to suspend business for 30 days.

At a hearing before the food administrator for Huntington County, Kromer admitted that during the entire month of March he had failed to observe the regulations which require bakers to use 20 per cent of nonwheat cereals in all bread. He has already given assurances that all rules and regulations will be strictly observed if he is allowed to reopen at the expiration of 30 days.

Selling large quantities of sugar without restriction in violation of regulations has cost two Brownsville, Tex., merchants their licenses. One of these is the Walker-Craig Co., a \$100,000 corporation organized last year, and the other is George McGonigle & Co. The orders become effective April 20.

Failure to use the necessary amounts of wheat substitutes in baking Victory bread and holding an unreasonable quantity of flour led to the suspension of the Food Administration's license held by John Haller, of Butte, Mont. He was ordered to discontinue business and to close his shop until May 2, with the understanding that he would be allowed to reopen at that

time if he gave assurances that he would observe all Food Administration rules and regulations and could show that all of his flour holdings except those needed to meet his needs for a reasonable period had been returned and put back into the channels of trade.

After a hearing before the Minnesota federal food administrator, the E. A. Brown Co., of Luverne, Minn., was ordered to suspend its flour business at Little Rock, Iowa, from May 1 to August 1, 1918.

Through its local manager at Little Rock, this elevator made a number of flour sales in February in disregard of the "50-50" rule. The concern had also before that made sales of flour in excessive quantities.

The A. F. Takamine Co., a Japanese wholesale firm at Denver, Colo., has been ordered to suspend all flour transactions for the entire period of the war.

At a hearing before the administrator for Colorado it was shown that the Japanese concern had been violating the "fifty-fifty" rule—selling wheat flour without substitutes.

Because it failed to fill its contracts the Hyatt Grain Co., of Waelder, Tex., has lost its license to deal in cotton seed, rice, feeds, and grains. The revocation became effective April 20:

As a result of an investigation following numerous complaints against the Hyatt Grain Co. the food administrator for Texas reported that the company was financially unable to complete its contracts—was a mere speculator and was a menace to legitimate dealers.

The company was given an opportunity to make good its irregularities but failed to take advantage of the opportunity. The administrator then ordered it to appear for a hearing and, upon failure to answer this summons, recommended that its license be revoked. The recommendation has been formally approved by the U. S. Food Administration.

As a sequel to the penalization of Swift & Co. and Zinn & Co., the Elmer Wood Co., of Moulton, Iowa, has lost its license to deal in eggs and poultry. The Wood company sold a large consignment of eggs to Swift & Co., receiving an unreasonable price. The revocation became effective April 24.

In addition to losing its license the Iowa concern will subscribe to the third Liberty loan an amount equal to the excessive profits derived from the transaction with the Swifts, and must donate the bonds to the American Red Cross. C. A. English, of Ottumwa, Iowa, who acted as an agent for the Elmer Wood Co., but who had no personal interest in the eggs and no place of business in New York, has been directed to subscribe \$100 to the Red Cross.

For selling sugar and flour in excessive quantities, and for violating the "50-50" rule, the Memphis Flour & Feed Store, of Memphis, Tenn., will be forced to suspend business for 30 days.

The license was revoked, but will again be issued, if at the end of 30 days, the firm gives assurances that it will follow all Food Administration regulations. At a hearing before the federal food administrator for Tennessee the Memphis concern admitted its guilt.

Joseph Reiter, a wholesale sugar dealer at Brooklyn, N. Y., who was found guilty of charging \$17 per 100 pounds for sugar, will be allowed to continue his business upon donating \$1,842 to the American Red Cross.

After a hearing the New York Federal Food Board decided to suspend action upon an agreement to give the Red Cross the amount estimated as the equivalent of the excessive profits derived by Reiter.

This action was taken partly in view of the fact that the violations occurred soon after the sugar regulations went into effect.

The Food Administration announces that all licensees are prohibited from dealing with dealers or importers of green coffee who have failed to obtain their licenses, as required by the President's proclamation of January 30. Many dealers of green coffee have failed to apply for licenses. They have laid themselves open to a fine of not more than \$5,000, imprisonment of not more than two years, or both. The Food Administration will take drastic action against those who delay longer in filing their application.

In view of the short time originally given in which to apply, the Food Administration has decided that in the case of applications now pending, but received after February 4—the date specified in the President's proclamation—licenses will be withheld until May 8. About 250 firms are affected by this order. In the interim these dealers and importers will not be allowed to engage in business, but the licenses will be issued on that date without further penalty. Those who file applications on or before May 8 will be required to postpone business for two weeks. Just what penalty will be meted out to those who delay beyond that day has not been announced, beyond the fact that drastic action will be taken.

A licensee who engages in business with dealers who have failed to obtain the necessary license is liable to the loss of his own license. As all licensees must place on every contract, order, supplement of order, invoice, price list, and quotations the words: "United States Food Administration license No. —," every licensee must know in dealing with these violators that the required license has not been procured.

The new crime of hoarding is developing some fresh wrinkles in attempts to evade the law and forcing county food administrators to match their wits against those of offenders. In New Mexico a man camouflaged with gunny sacks a stock of hoarded flour in a cellar. The cellar looked just like a large empty space—so he thought; but food administration investigators outwitted the hoarder, who was allowed to retain one sack for the use of his family and to designate a grocer who will supply him with a maximum of six pounds per person in his family per month.

The Frazier Packing Co., of Elwood, Ind., manufacturers of tomato catsup and tomato products, has lost its license to can dried beans and tomatoes, and the Food Administration has announced that it will refuse to issue it a license to manufacture tomato catsup. It was shown that the concern had delivered short on tomato catsup contracts and had sold tomato catsup during the packing season at prices higher than the contract prices.

The finding of the Federal Trade Commission follows, in part:

"Mr. Frazier entered into contracts for future delivery. He could not purchase tomatoes at the price which he anticipated. He made no effort to obtain them at a higher price. He wrote all the brokers that if they would pay 7½ cents per case he would pay more for the raw product. The brokers did not agree to increase the price.

"Mr. O. B. Frazier, president of the Frazier Packing Co., also owns \$40,000 of the capital stock of the Frazier Packing Co. The entire capital stock is \$50,000. He went into the open market and bought tomato pulp in the name of the Frazier Packing Co., but he contends that the pulp was his individual property. The Frazier Packing Co. manufactured this tomato pulp into catsup, using its own plant, its own force, its own bottles, its own boxes, its own labor, and its own labels, and sold the catsup on the open market at the market price. The Frazier Packing Co. agreed to turn the proceeds of these sales over to Mr. O. B. Frazier

individually after making due allowances for the cost and expense of manufacture and after deducting a charge for handling."

The Red Cross is richer by \$2,500 as a result of penalties inflicted upon seven retail grocers at Buffalo, N. Y. At a hearing before the federal food administrator for New York State grocers found guilty of violating Food Administration rules and regulations were instructed to make donations to the Red Cross in lieu of losing their licenses. The offenses were chiefly against the "50-50" rule and selling flour in excessive quantities.

A list of the concerns follows: Andrew Kryzyanowski, \$150; M. Carini, \$50; F. X. Winkler Sons, \$250; Faxon Williams Faxon Co., \$50; Henry Schaefer Estate, \$250; J. N. Adam Co., \$1,500; Muschowski Retail Grocery, \$250. In addition, the Servus Grocery Store was ordered to suspend business for two weeks.

The Food Administration has revoked the license of A. P. Treadwell & Co., brokers in cottonseed cake and cottonseed meal at Atlanta, Ga.

After twice failing to answer summons for a hearing before the federal food administrator for Georgia, the company was notified that its license was revoked and it would be required to suspend operation for the duration of the war.

The firm was originally summoned to explain its failure to make delivery on a number of cottonseed contracts.

Failure to use the required amount of substitutes in bread and rolls has cost the Atlanta Baking Co., Atlanta, Ga., \$1,000. This amount has been donated to the Red Cross, upon order of the Georgia food administrator.

In requiring this donation the administrator declared that his only reason for not compelling the concern to close was that it was a necessity to the locality. During the past few weeks the Atlanta Baking Co. has used about 10 per cent of wheat substitutes, while the food administration's rules and regulations until April 14 required 20 per cent, and now calls for 25 per cent.

Because they sold flour without requiring the purchase of an equivalent amount of wheat substitutes, Luigi Viola and Francesco Ritollo, two Italian grocers at Rochester, N. Y., have been ordered to close their stores for two days.

Selling sugar at exorbitant prices and in unreasonable quantities has cost the license of the White Star Confectionery Co., of Boston, Mass., and a donation of \$200 to the Red Cross.

The baker's license of George C. Schmidt, Covington, Ky., was revoked for a period of two weeks, beginning April 29, for failure to keep proper records of his business, falsification of his records, making false reports of the use of substitutes, and the amount of substitutes on hand, and using flour without the required substitutes.

For selling sugar and flour in excessive quantities and for violating the "50-50" rule, Max Awrach, proprietor of a grocery at San Antonio, Tex., has been made to donate \$250 to the Red Cross.

The retail store of W. H. Lewis, Marianna, Ark., has been closed for a period of three months for sell-

ing flour in excessive quantities and for violation of the "fifty-fifty" rule.

Fourteen bakers in Rochester, N. Y., were ordered to suspend operations for various periods after being found guilty of selling bread without the proper amounts of substitutes.

R. Levin, W. Koester, M. Lipani, and M. Schwind were closed one day; the Palermo Baking Company, Max Janowsky, A. Stralls, B. Marasco, Steib Brothers, S. W. Dukat, A. Goldman, A. Cadaro, G. Merinsky and L. Green were each closed for two days.

Tony Lotembio, a grocer, was closed two days for violating the "fifty-fifty" regulation.

Under orders from the Food Administration in Washington, the Federal Food Board of New York City has closed up several macaroni manufacturers—some for exceeding the amount of flour allotted to them under the rules, others for operating without a Food Administration license.

Among the former are: the Bologna Macaroni Co., Long Island City, closed for two months, beginning May 1, and the Marcello Raffetto & Bro. Macaroni Co., New York City, closed from May 1 to June 16. Others who have been closed indefinitely for operating without a license are: P. Antico, Brooklyn; Bronx Macaroni Co., New York City; Crignano Macaroni Co., New York City; G. Criscualo, New York City; Donato Faraco & Bros., Brooklyn; Joseph Ferrari, Brooklyn; Edward H. Liker, New York City; N. N., 101 Atlantic Street, Brooklyn; Frank Tutina, New York City.

Because they used excessive quantities of sugar in the manufacture of soft drinks, the supply of licensed food commodities has been shut off for six months from Hagen-Dodd Co., of Atlanta, Ga., and from the Red Rock Co., a subsidiary concern.

For selling flour in excessive quantities, the Worth Milling Company, of Fort Worth, Texas, has lost its license. It will be allowed to apply for a new license after June 15, if in the meantime it follows the Food Administration program.

This is one of the first cases handled by the newly organized Zone Committee for the Kansas City Zone. The committee is one of ten organized to secure rigid enforcement of the milling regulations throughout the country, and consists of Kansas City and Omaha agents of the Grain Corporation, the local divisional chairman of the Milling Division, representatives of the corn milling industry, and the federal food administrators for Kansas, Colorado, Utah, Oklahoma, Texas, New Mexico, and Nebraska.

Unjustifiable rejection of a carload of corn meal has led to the revocation of the Food Administration license of the Servus Trading Company, 114 Hudson Street, New York City. The revocation is effective for the duration of the war, and the Food Administration has forbidden all officials of the firm to deal in any licensed food commodities.

Upon investigation the New York Federal Food Board found there was absolutely no justification for the rejection, which indicated total disregard for the rules and regulations of the Food Administration. Shipment had been made price for corn meal had fallen during transportation and the price for cornmeal had fallen during transportation and the shipment was refused.

Supreme Court Decision on "Compound"

SUPREME COURT OF THE UNITED STATES.

No. 468.—October Term, 1917.

The United States, Plaintiff in Error, vs. Joseph L. Schider, trading as "Jos. L. Schider & Co." In error to the District Court of the United States for the Southern District of New York.

April 15, 1918.

Mr. Justice McReynolds delivered the opinion of the Court.

An indictment containing six counts charged defendant, Schider, with violating the Food & Drug Act of June 30, 1906, (34 Stat. 768) by delivering for shipment in interstate commerce food contained in a bottle plainly labeled as follows:

Compound
Ess Grape

Jos. L. Schider & Co.

93-95 Maiden Lane, New York.

Each count alleged the article was an imitation of grape essence artificially prepared from alcohol, water and synthetically produced imitation oils and contained no product of the grape nor any added poisonous or deleterious ingredient; and that the word "imitation" nowhere appeared.

The first count further alleged it was "unlawfully adulterated in that an imitation grape essence artificially prepared from alcohol, water and synthetically produced imitation essential oils had been wholly substituted for a true grape product, which the article purported to be"; and the second that it was "unlawfully adulterated in that an imitation grape essence artificially prepared from alcohol, water and synthetically produced imitation essential oils had been mixed with the said article so as to reduce and lower and injuriously affect the quality and strength of the said article."

The third, fourth, fifth and sixth counts, in varying ways, further alleged misbranding so as to deceive and mislead in that the label indicated a true grape product, whereas the article was not such but an imitation artificially prepared, one which contained nothing from grapes.

The trial court sustained a demurrer to each count upon the view that, properly construed, the Food & Drug Act did not apply to facts stated.

Pertinent portions of the Act follow:

"Sec. 7. That for the purposes of this Act an article shall be deemed to be adulterated: . . .

"First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

"Second. If any substance has been substituted wholly or in part for the article.

"Sec. 8. That the term 'misbranded,' as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the state, territory or country in which it is manufactured or produced.

"That for the purposes of this Act an article shall also be deemed to be misbranded: . . .

"First. If it be an imitation of or offered for sale under the distinctive name of another article.

"Second. If it be labeled or branded so as to deceive or mislead the purchaser, . . .

"Fourth. If the package containing it or its label shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular; *Provided*, That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases: . . . Second. In the case of articles labeled, branded or tagged so as to plainly indicate that they are compounds, imitations or blends, and the word 'compound,' 'imitation' or 'blend,' as the case may be, is plainly stated on the package in which it is offered for sale. . . . (34 Stat., c. 3915, pp. 768, 770, 771.)"

The obvious and undisputed purpose and effect of the label was to declare the bottle article "a compound essence of grape." In fact, it contained nothing from grapes and was a mere imitation.

Within the statute's general terms the article must be deemed adulterated since some other substance had been substituted wholly for the one indicated by the label; and, also, it was misbranded, for the label carried a false and misleading statement.

Defendant relies on the proviso in section eight which declares articles of food shall not be deemed adulterated or misbranded if they are "labeled, branded or tagged so as to plainly indicate that they are compounds, imitation or blends and the word 'compound,' 'imitation' or 'blend,' as the case may be, is plainly stated on the package in which it is offered for sale." But we are unable to conclude that by simply using "compound" upon his label a dishonest manufacturer exempts his wares from all inhibitions of the statute and obtains full license to befool the public. Such a construction would defeat the highly beneficent end which Congress had in view.

We have heretofore said: "The purpose of the act is to secure the purity of food and drugs and to inform purchasers of what they are buying. Its provisions are directed to that purpose and must be construed to effect it." *United States v. Antikamnia Co.*, 231 U. S. 654, 665. "The legislation, as against misbranding, intended to make it possible that the consumer should know that an article purchased was what it purported to be; that it might be bought for what it really was and not upon misrepresentations as to character and quality." *United States v. Lexington Mill Co.*, 232 U. S. 399, 409. And see *United States v. Coca Cola Co.*, 241 U. S. 265, 277.

The stuff put into commerce by defendant was an "imitation" and if so labeled purchasers would have had some notice. To call it "compound essence of grape" certainly did not suggest a mere imitation but on the contrary falsely indicated that it contained something derived from grapes. See *Frank v. United States*, 192 Fed. 864. The statute enjoins truth; this label exhales deceit.

The trial court erred in sustaining the demurrer. Its judgment is reversed and the cause remanded for further proceedings in accordance with this opinion.

Reversed and remanded.

Conserving Sugar in Ice Cream Manufacture

By H. A. RUEHE,

Associate in Dairy Manufactures, University of Illinois
Agricultural Experiment Station.

Since the Food Administration has limited the ice cream manufacturers to 80 per cent of their 1917 sugar supply, the question that is uppermost in the mind of every ice cream manufacturer is, How am I to meet the sugar situation and maintain my business?

Although sugar contributes to the food value of ice cream, its prime function is to properly sweeten the product to make it palatable. The food value can be replaced by other food products less precious than sugar.

There are several substances that have been used in ice cream in order to conserve sugar. Some of these substances are glucose, corn sugar, and commercial invert sugar. The glucose and corn sugar are considered sugar substitutes by the Food Administration but the invert sugar is not so considered because it is manufactured from the same sources as sugar. Sugar, however, can be saved by the use of invert sugar since inversion increases the total sweetness.

Sugar when taken into the body is acted upon by the invertase in the intestines and changed from sucrose to dextrose and levulose in equal proportions. Dextrose is not so sweet as sugar, but levulose is sweeter. In addition, levulose possesses a pronounced flavor which is quite characteristic of honey and which makes it taste sweeter than sugar. Accordingly, if sugar is inverted before being used in ice cream, its sweetening power is increased.

Cane sugar (or beet sugar) can be inverted by the simple process of heating in the presence of an acid. The chemical reaction that takes place results in the same products being formed as are formed when the sugar (sucrose) is taken into the human body, the sugar forming equal parts of dextrose and levulose. The following formula may be used in making invert sugar sirup of such sweetness that a pound of the sirup will replace a pound of sugar.

100 pounds of sugar,
44 pounds of water,
50 grams of powdered tartaric acid.

These ingredients are mixed together and boiled for 30 to 35 minutes. If boiled longer than 35 minutes, the sirup darkens in color and a flavor develops which tends to make the sirup resemble glucose sirup, and this is somewhat undesirable. This solution boils at a temperature of about 221 degrees Fahrenheit. A steam pressure kettle can be used very satisfactorily or an open candy kettle over a steady fire may be used. If the solution is boiled too vigorously, there will be too large a loss by evaporation. Ordinarily the loss will be from 3 to 5 per cent.

The above formula should make 140 pounds of sirup, and if there is considerable loss due to evaporation, the sirup can be brought up to this weight by the addition of water. The resultant invert sugar sirup is not unlike strained honey in appearance and taste. It contains about 71.4 per cent of sugar and it tastes considerably sweeter than a sugar sirup of the same strength. It does not crystallize, and it mixes readily

with the ingredients of the ice cream. It can be used in the same proportions as sugar, the amount necessary for ten gallons of ice cream being 6.5 to 7 pounds. It gives very satisfactory results in freezing and a pleasant flavor in the finished product.

It can be readily seen that by using the above method the sugar supply can literally be stretched, for with only 71.4 per cent as much sugar as is now being used in ice cream, the same degree of sweetness can be obtained.

A further saving of sugar can be accomplished by substituting either corn sugar or glucose for part of the invert sugar sirup. Neither of these substitutes can be used to totally replace the sugar or invert sugar because of the undesirable flavors which are imparted to the ice cream when used in such amounts. However, they can be used to replace from 25 to 40 per cent of the sirup, depending upon the quality of these products. Neither glucose nor corn sugar is as sweet as cane sugar, so that it is not possible to use either of them to replace cane sugar pound for pound. Glucose is about 60 per cent and corn sugar about 80 per cent as sweet as cane sugar.

The United States Department of Agriculture has permitted the use of these sugar substitutes providing that the consumer is properly informed that such substitution has been made. Some of the state food departments have taken the same attitude, whereas others have not as yet given any decision on this question.

Conserving sugar at this time is not only meeting the demands of the ice cream business, but is also a patriotic duty.

Read the Labels On "Canned Corn."

Early frosts of the past season and an increased demand for canned corn have caused a shortage of "sweet corn," which is what the housewife usually expects to get when buying "canned corn." To offset this scarcity, says the Bureau of Chemistry, U. S. Department of Agriculture, some packers have canned the green or immature "field corn," which is tougher and coarser and of lower quality than the ordinary sweet corn, and have sweetened it with sugar.

This product, says the bureau, is not, strictly speaking, a "canned corn" and the federal authorities require the product to be labeled as "field corn." When the product is sweetened with sugar this fact should also be declared upon the label. Purchasers and consumers are advised to read the labels on canned corn and to remember that if they are purchasing sweetened canned field corn which has been properly canned, they are obtaining a wholesome article of food. They should expect, however, that the field corn will not be of the same quality as the ordinary sweet corn and they should be compensated by not paying so much for it.

Only a small amount of the corn grown in the country is cooked and eaten as a vegetable for human food. The original corn plant which the early settlers in America found the Indians growing has been carefully improved by proper selection and planting until now certain special varieties which mature early have a comparatively long period in the course of their development during which the sugar content is high and the starch content is low. The tissues of this corn are tender and succulent. This is what is known as "sweet corn" or "sugar corn" and is the product commonly used as a vegetable.

Field corn when partially ripe and tender is used as a vegetable to a limited extent. The period of sweetness in field corn is comparatively short, and there is greater tendency to toughness of the tissues.

BOOK REVIEWS

CHEMISTRY OF FOOD AND NUTRITION, by Henry C. Sherman, Ph. D., Professor of Food Chemistry at Columbia University. Second edition, rewritten and enlarged, Octavo of 431 pages. The MacMillan Company, New York. 1918. Cloth, \$2.00.

Dr. Sherman has courageously sounded the new note in dietetics by stating in his preface that "special attention has been given to the difficult task of attempting to present the striking results of some of the most recent investigations in nutrition in such a manner as to make clear their importance without giving exaggerated impressions and with due emphasis upon the fact that on many significant points any interpretation which can now be offered is necessarily tentative." In the introduction he amplifies this by saying that "Recent investigations have developed the fact that food of sufficient energy value and containing ample amounts of each of the chemical elements known to be essential to the body is not necessarily adequate to meet all the requirements of nutrition. Thus it appears that certain substances occurring in natural foods but not yet chemically identified are also to be included among the nutritive requirements of the body and therefore among the factors which determine the nutritive values of foods. At present these unidentified substances are referred to as 'vitamines' or as 'fat soluble A' and 'water soluble B.'" Dr. Sherman adds to the usual essentials of the diet—foods which shall provide energy, repair tissue, and regulate body functions—a fourth essential: sufficient of the, at present unidentified, substances under discussion.

As Dr. Sherman's various books are widely used as text books, this revision of the present title should ensure its being used with college classes in nutrition.

EVERYDAY FOODS IN WAR TIME, by Mary Swartz Rose, Assistant Professor in the Department of Nutrition, Teachers' College, Columbia University. Small octavo of 117 pages. The Macmillan Company, New York. 1918. Cloth, 80 cents.

With the possible exception of a little haziness anent fats and "vitamines," this work of Mrs. Rose's is as clear-cut as a cameo. It is, avowedly, ephemeral, but on the other hand it is up to the minute in that it takes cognizance of the work of Dr. McCollum and other present-day experimenters. By a careful reading of the 83 pages of text (the balance of the book is "Appendix"), one can gain a very fair insight on our present ideas of human nutrition. It certainly should be in the hands of every one interested in dietetics.

INFANT FEEDING, by Clifford G. Grulee, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Attending Pediatrician to Presbyterian Hospital, Chicago. Third edition, thoroughly revised. Octavo of 326 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1917. Cloth, \$3.25 net.

In his preface to this, the third edition, Dr. Grulee states that the chapter on Absorption and Metabolism, as it appeared in earlier editions, has been especially revised and added to. The book performs two functions: that of bringing down to the present moment the scientific processes which underlie infant feeding and that of describing in comparatively simple fashion the practical application of these principles. It is based upon a course of lectures given to the students of Rush

Medical College for the past several years. There are four main parts: I, chapters on anatomy, physiology, metabolism, intestinal bacteriology, and the attributes of the healthy child; II, three chapters on the breast-fed infant; III, artificial feeding and its many attendant disturbances; IV, nine chapters on the nutrition of the infant under many and various conditions. Practising physicians, especially those concerned with sanitary milk laws, dietitians, manufacturers of proprietary baby foods and hospital authorities, will find this book both interesting and instructive.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,259,336. Dough-dividing machine. Frederick Aeschbach, Aarau, Switzerland.

1,259,376. Process for curing meats. George F. Doran, Omaha, Neb.

1,259,377. Pickling liquor and process of making the same. George F. Doran, Omaha, Neb.

1,259,410. Process and apparatus for preserving fruits, vegetables, grain, and other organic substances. Shaporji A. Kapadia, South Kensington, London, England.

1,259,439. Preserving meat. Edward H. Pedelwitz, Anadarko, Okla.

1,259,483. Milk substitute (shortening and milk substitute for use in making breadstuffs, etc.). Fritz H. Brown, Chicago, Ill.

1,259,568. Process of producing sugars. Robert L. Ulman, Baltimore county, Md.

1,259,631. Method of preparing evaporated vegetables. Ralph W. King, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,259,632. Method of preparing evaporated vegetables. Ralph W. King, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,259,633. Method of preparing evaporated fruit. Ralph W. King, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,259,634. Method of preparing evaporated apples. Ralph W. King, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,259,635. Evaporated vegetable product. Ralph W. King, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,259,636. Evaporated apples. Ralph W. King, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,259,637. Evaporated fruits. Ralph W. King, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,259,774. Apparatus for drying tomatoes and fruit. Thomas J. Peters, Peters, Fla.

1,259,905. Fruit and melon grader. Albert W. Phelps, Fresno, Cal.

1,260,542. Food compound and process of making the same. William Horlick, Jr., Racine, Wis.

1,260,555. Filled-wafer cutter. Edward E. Lawrence, Cambridge, Mass., assignor to Loose-Wiles Biscuit Co., Kansas City, Mo.

1,260,558. Jelly-depositing attachment for cake-icing machines. Edward Legler, Kansas City, Kans., assignor to Loose-Wiles Biscuit Co., Kansas City, Mo.

1,260,636. Siruping and packing machine. Joseph A. Campbell, Ontario, and Vernon, O. Campbell, Fresno, Cal., assignors to California Growers Association, Fresno, Cal.

1,260,755. Method of making sausage-casings. Presley E. Comegys, Chicago, Ill.

1,261,057. Laxative breakfast food. Thomas H. Robinson, London, Ontario, Canada.

1,261,238. Candy-pulling hook. Thomas H. Jacob, Wausau, Wis.

1,261,412. Method of preparing immature vegetables for food. Samuel N. Lewites, New York, N. Y.

1,261,704. Fruit slicer and pitter. George W. Clemson, Owensmouth, Cal.

1,261,724. Process of preserving eggs and product thereof. Anual Duke, Marion, Ind.

Federal Trade Commission on Price Maintenance.

For a considerable time there has been a controversy throughout the country over the question of the right of manufacturers, wholesalers, and others to fix resale prices at which their articles could be sold, and the right to maintain such resale prices has been contended for by them, and the question whether such right exists has been brought before the Federal Trade Commission numerous times.

Many hearings have been had, many complaints have been made, and much consideration has been given to the subject by that commission. Many business concerns have been refusing to sell to customers who would not agree to maintain the resale price fixed by the seller.

The Federal Trade Commission has just disposed of the first of these cases in which complaints have been issued charging violations of law through fixing the resale price of articles, and an order to cease and desist from this practice has just been issued by it in the case of Chester Kent & Company, Inc., of Boston, manufacturers of proprietary medicines.

Attorneys for the company admitted that in the past the practices complained of had been in use. The order, the first in cases of this character, forbids the company to:

- (a) Indicate to dealers the prices for which its proprietary or patent medicines shall be resold.
- (b) Secure agreements from dealers to adhere to such prices.
- (c) Refuse to sell to dealers who fail to adhere to such prices.
- (d) Refuse to sell to dealers who fail to adhere to such prices upon the same terms as dealers who do so adhere.
- (e) Furnish any advantage to dealers who adhere to the resale prices, while refusing similar treatment to dealers who do not adhere to the prices.

This order of the commission follows the decision of the Supreme Court of the United States in the American Graphophone Company case lately decided by it.

Some of the most distinguished lawyers in the United States have appeared before the commission to argue this question, as well as many of the leading business concerns of the country, some of whom have insisted that the maintenance of resale prices was proper, and others that it was not. Almost all of the large department stores of the country have been heard in opposition to it.

After full consideration the Federal Trade Commission has decided to issue complaints against all business concerns who refuse to sell unless the purchaser will agree to maintain a resale price fixed by the seller. The case just decided is the first formal finding by the commission to that effect.

When once an article has passed from the maker to a purchaser, he owns it, and the owner of such article may sell it at any price that he chooses provided he does not himself sell it at such price as to be below cost, and thus thereby enter into unfair competition with other retailers selling the same article.

This decision is going to be open to considerable controversy in relation to the subject matter thereof, and the matter will probably have to be settled by an act of Congress in the manner suggested by Mr. Justice Brandeis in his concurring opinion in the Supreme Court of the United States, in the case of the American Graphophone Company. The Stephens bill which

is now in Congress is in relation to that matter, but in the estimation of many business men and others it is thought to be broader than it should be. It may be that resale prices can be so regulated by placing the power somewhere protecting against unfair prices as to make it work equitably, and be a fair method of competition in commerce, but that question will undoubtedly have to be settled by congressional action.

The Wheat Price Stays.

By a decisive vote the lower house of Congress refused to concur in Senator Gore's amendment to the Agricultural Bill, fixing the price of wheat at country delivery stations at \$2.50 per bushel. It voted down a substitute amendment fixing that price at the principal shipping centers; so it is doubtful if we shall hear anything more about Congress fixing the price of wheat until next fall.

This agitation to disturb the price fixed by the President has been productive of trouble, says *The American Miller*. It was proposed by Senator Gore too late to affect in the slightest degree the acreage of winter wheat for 1918. It came up in the House too late to affect the acreage of spring wheat. Its only result has been to keep wheat off the market, that otherwise would have come in. It has been one of the influences that has prevented this country from meeting its obligations to our Allies in the shipment of wheat and flour. Whatever the motives of the promoters of this legislation, the results have been vicious and an encouragement to the enemy.

Prospects for Winter Wheat Excellent.

A possible 650,000,000 bushels, the greatest winter wheat crop since the record breaking yield of 1915, together with a probable increase of 15 per cent in the acreage of spring wheat, is the forecast made in a report on the condition of winter wheat issued on May 5 by the Chamber of Commerce of the United States through its Committee on Statistics and Standards.

"The present acreage now standing in winter wheat," says the report, "is 20 per cent greater than the acreage at the same time in 1917. But the greatest promise of a high yield of winter wheat is found in the general high condition of the wheat, a condition which has improved steadily since the first of April.

"Estimates of coming yields are always uncertain because of the possible vicissitudes of weather and depredations of insect enemies. But the crop has come through the trying month of March with a higher condition than it entered it, and with moderately favorable weather from now on there is promised a production of at least 600,000,000 bushels. It may go as high as 650,000,000 bushels if all goes well."

On the subject of spring wheat the report says: "There is little to be said of spring wheat, but that little is most encouraging. Seeding is nearly completed and under most favorable conditions, one of the most important of which is the large amount of moisture in the subsoil. The outlook is for an increased acreage over last year of about 15 per cent. The increase is so large in Iowa, Wisconsin and Nebraska that it reads like the operations of an adding machine. Where the plant is up the condition is excellent."

Michigan Department Goes Into Milk Business.

The Michigan State Food and Dairy Department has taken over the management of the Grand Rapids Dairy Co. The plant will be run not only as a commercial enterprise but also as a demonstration and experiment plant.

Stocks of Grain, Flour and Meal in the United States April 1, 1918.

Commercial stocks of wheat reported to the U. S. Department of Agriculture in the April 1 food survey amounted to 29,124,278 bushels. This amount was held by 8,876 firms consisting of elevators, warehouses, grain mills, and wholesale grain dealers and was slightly less than 33 per cent of the stocks held by the same firms on April 1, 1917. The commercial visible supply figures for the nearest date, as published by the Chicago Board of Trade, namely, April 6, 1918, showed only 4,695,000 bushels as against 47,363,000 bushels a year ago; while Bradstreet's reported 10,180,000 bushels on hand March 30, 1918, as against 48,525,000 bushels for the same date a year earlier.

It is pointed out that the comparative figures thus shown for the commercial stocks of wheat this year and last should be considered in connection with the stocks still remaining on the farm. No figures are available with reference to the estimated stocks on farms for April 1. However, figures previously issued by the department show that the estimated stocks on farms for March 1, 1918, were greater than for the same date a year earlier, being 111,650,000 bushels as against 100,650,000 bushels. At the same time, the movement of wheat to the eleven primary markets, according to trade figures, was considerably greater in March, 1917, than in March this year, being 20,062,000 bushels as against 5,304,000 bushels. These figures indicate, it is stated, that the stocks of wheat remaining on farms April 1 this year were greater than those of a year ago.

The survey covered commercial stocks of wheat, corn, oats, barley, and rye, together with flour and flour substitutes. Data for stocks on hand April 1, 1917, as well as present stocks, were obtained.

The stocks of other cereals reported were, in round figures: corn, 33 million bushels; oats, 46 million; barley, 14 million; and rye, 4 million. These figures represent the following percentages of the April 1, 1917, stocks: corn, 104 per cent; oats, 76 per cent; barley, 142 per cent; and rye, 130 per cent. Hence, while the commercial stocks of wheat and oats were considerably less on April 1, 1918, than on April 1, 1917, the commercial stocks of corn, barley and rye were larger.

The wheat flour, including a small quantity of whole wheat and graham flour, amounted to 2,318,847 barrels, reported by 8,488 firms. This amount was 84 per cent of the stocks held one year ago. The stocks of wheat-flour substitutes, namely, of flour and meal from grains other than wheat, were all considerably larger than those of a year ago. Of these wheat-flour substitutes, the stocks of corn flour and meal, amounting to a total of 35 million pounds, is by far the most important item. This amount represents nearly 200 per cent of the commercial stocks of corn flour and meal on hand April 1, 1917.

The Sixth Monthly War Emergency Dairy Products Report.

The report of the production of creamery butter, whey butter, process butter and oleomargarine in the month of March, 1917, and 1918, was as follows:

Reports from 2,914 creameries showed a production in March, 1918, of 37,956,702 pounds of **creamery butter**.

The report from 212 **whey butter** factories showed a production in March, 1918, of 306,998 pounds.

The reports from 35 **process butter** factories showed a production in March, 1918, of 1,821,788 pounds.

The reports from all factories gave the total production of **oleomargarine**, both colored and uncolored, as 30,551,287 pounds, an increased production in March, 1918, above March, 1917, of 31.84 per cent. The total production of uncolored oleomargarine in March, 1917, was 22,524,105 pounds as compared with 29,866,736 pounds in March, 1918. The production of colored oleomargarine in March, 1917, was 648,656 pounds as compared with 684,551 pounds in March, 1918.

The production of strictly vegetable oil oleomargarine or nut margarine, which amount is included above, was 1,023,895 pounds uncolored product in March, 1917, as compared with a total of 7,175,174 pounds in March, 1918, of which 350 pounds was colored. This represents an increase in the total production of strictly vegetable oil oleomargarine in March, 1918, as compared with a production in March, 1917, of 600.77 per cent.

Report of Cold Storage Holdings May 1, 1918.

The total stocks of **American Cheese** reported by 471 storages show 24,241,545 pounds.

The total stocks of **Creamery Butter** reported by 375 storages show 10,245,288 pounds.

The total stocks of **Packing Stock Butter** reported by 125 storages show 1,497,281 pounds.

The total stocks of **Eggs** reported by 461 storages show 2,935,362 pounds.

The total stocks of **Frozen Eggs** reported by 193 storages show 9,284,243 pounds.

The total stocks of **Frozen Beef** reported by 376 storages show that their rooms contain 227,076,879 pounds.

The total stocks of **Cured Beef** reported by 377 storages show 30,969,230 pounds.

The total stocks of **Lamb and Mutton** reported by 206 storages show 3,986,695 pounds.

The total stocks of **Frozen Pork** reported by 353 storages show 133,190,365 pounds.

The total stocks of **Dry Salt Pork** reported by 475 storages show 470,699,967 pounds.

The total stocks of **Sweet Pickled Pork** reported by 542 storages show 404,573,376 pounds.

The total stocks of **Lard** reported by 578 storages show 102,842,306 pounds.

Tabulating Food Prices.

The food administrator for Philadelphia, Jay Cooke, has worked out a convenient method of tabulating food prices for the information of the public. The purpose of the publication of food prices is to give the best possible currency to fair prices, and incidentally to bring the pressure of public opinion to bear upon those who are disposed to ask too much. In cataloging his market reports in food prices Mr. Cooke throws his commodities under different heads, according as they are abundant, normal, or sparse in supply. The basis upon which fair prices are computed is outlined carefully for the information of the public. Special illustrations are given of fair food prices under different classes of commodities. Commodities are then arranged into groups, according as they are "cheap," "moderate" or in the "luxury" group. By means of this system, without further comment, Mr. Cooke is able to classify prices in a way that permits comparison, without demanding that all prices should necessarily be in the cheap class.

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Washington News

Food Administration Representative to Sit in Allied Council.

Safe arrival in London of James H. Skinner, representative of the United States Food Administration to sit on the inter-Allied Council in the working out of all problems arising between the Allied governments in the prosecution of the war, was announced on April 22 by the Food Administration.

Mr. Skinner's associates on the Council will be Lord Rhondda, M. Boret and Signor Crespi, of the British, French and Italian food ministries, respectively. The representatives of the Allied countries probably will sit continuously in the consideration and solution of problems affecting the food supply of not only the Allied peoples but those of neutral countries as well.

According to the announcement, Mr. Skinner "is a native of Minnesota and has been one of St. Paul's leading citizens, having been president of the Merchants' Trust and Savings Bank when called to undertake the important duties and responsibilities which fall upon him as a member of the inter-Allied Council. Mr. Skinner is a graduate of Cornell University, a man of broad culture and an executive of proved ability."

Recent Food Price Charges Compiled by Labor Bureau.

The United States Department of Labor, Bureau of Statistics, issues the following statement concerning changes in retail prices of food during one month, one year, and since 1913.

In February, 1918, the principal articles of food combined, in Washington, D. C., cost: 76 per cent more than they did in February, 1913; 70 per cent more than they did in February, 1914; and 21 per cent more than they did in February, 1917; but they were 2 per cent cheaper than in January, 1918.

During the one month from January to February, 1918, of the 23 articles included in the bureau's index number, 11 articles increased in price, 10 articles decreased in price, and 2 articles, lard and milk, remained the same. The greatest increase, 12 per cent, was shown in hens. The greatest decrease, 18 per cent, was shown in eggs.

A comparison as between February, 1917, and February, 1918, a period of one year, shows that only two articles decreased in price. These two articles were potatoes and coffee, which decreased 32 per cent and less than 1 per cent, respectively. In this year only two articles increased less than 10 per cent. The increases in the price of six articles ranged from 13 to 25 per cent; increases in 10 articles ranged from 25 to 46 per cent; and in three articles from 57 to 97 per cent.

For the five-year period, February, 1913, to February, 1918, every article increased 38 per cent or more. Only four articles increased less than 50 per cent. Ten articles increased between 50 and 100 per cent. Five articles increased over 100 per cent. Four of these five increased over 125 per cent and two over 150 per cent.

Sugar to Be Saved for Essentials.

Manufacturers using sugar except to make essential food products will be put on strict rations, the U. S. Food Administration has announced, in order to assure sufficient supplies for home canners and the commercial

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manufacturers of preserves, jams and other foodstuffs regarded as essential. The restrictions go into effect May 15 and limit the consumption by manufacturers of the less essentials, particularly confectionery and soft drinks. This entire group is allowed to use only 80 per cent of last year's requirements, and under the new plan distribution will be well policed under a certificate system that virtually assures the elimination of fictitious demands.

Manufacturers of non-edible products will be forced to go entirely without sugar.

Included in the class with confectionery and soft drinks are condiments, soda water, chocolate, candies, beverage sirups, fruit sirups, flavoring extracts, chewing gum, cocoa, sweet pickles, wines, cereals and invert sugar. Those who entered the business or increased their capacity after April 1, 1918, however, will be cut off entirely.

Manufacturers of essential foodstuffs will be permitted to buy sufficient sugar to meet their full requirements. In this class some preservers and packers of vegetables, catsup and chili sauce, fruits and milk, manufacturers of jam, jelly, and preserves, tobacco and explosives, apple butter and glycerine, ice cream (not including sherberts and water ices), druggists (for medicines) and producers of honey.

Ice cream is put in the preferred class to assure consumption of surplus milk supplies and thus encourage dairy interests to maintain production. Tobacco was placed in this class largely because the amount of sugar by tobaccoists is almost negligible, the chief source of sweets being molasses.

Manufacturers of less essentials who entered the

business or increased their capacity before November 1, 1917, shall receive the 80 per cent allowance, but those who started or expanded after that date but before April 1, 1918, in the face of an actual sugar shortage and with full knowledge of the Food Administration's announced program of sugar conservation, will be cut down to 50 per cent of requirements. Those who commenced operations or increased their capacity after that date will not be allowed to purchase sugar in any amounts.

These definite classifications protect the patriotic manufacturer who has been observing the requests of the Food Administration against competitors who have taken advantage of the sugar shortage to increase their profits.

Control of distribution will be in the hands of the federal food administrators of each state. They will issue certificates to all manufacturers requiring sugar, upon delivery of sworn statements showing the amounts to which each is entitled. None of the distributing agencies will be allowed to sell sugar to any class of manufacturers except upon delivery of certificates. The certificates cover the period from May 15 to July 1, when new conservation measures may be deemed advisable.

All sellers of sugar—whether refiners, jobbers, retail or wholesale grocers—must cancel the certificates and return them within one month after the sale, to the federal food administrator by whom they were issued. From the returned certificates he will be able to check the record of those who are entitled to sugar and to detect any trading in or counterfeiting of certificates.

Food saving must begin with buying

THE Housewives of America are the army behind the army. They are trying to do the greatest work ever done in any war by women—to save food every day that our armies may be fed and our victories may be won.

The problem of the housewife is not simple. She can and does observe meatless and wheatless days, and she can and does cut down on the quantity of food used. She will not waste food.

But she is entitled to be protected against waste in buying; she is entitled to organized co-operation that will supply her home with food products which will make real saving possible.

Our institution is organized today to give the housewife just that help. Every Wilson food product is selected, handled and prepared with the respect due that which is to be served in your home. It is satisfactory and economical.

More than that, we can give you personal advice and suggestions—tell you how to buy economically, how to cook economically—how to save in the kitchen and on your table.

Write me and ask for the information you wish. There is nothing more important in our service to our country than to help you in the service you give it in your home. Our Institution is the Intelligence Department of the Army Behind the Army, and our facilities are cheerfully and willingly at your command.

Thos. E. Wilson
President, Wilson & Co.



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Manufacturers are being required to report the amount of sugar they held on January 1, 1917, and receipts from that date until July 1. Subtracting the amount on hand July 1 will give the total consumption for the first six months of 1917. They must also report stock on hand January 1, 1918, and receipts since that date. From those figures the administrators will be able to determine the additional amount of sugar to which the manufactures are entitled.

Sugar Supplies for the Summer.

Distribution of sugar to meet this summer's canning demands will be under a modified certificate system, the U. S. Food Administration announced. This is done in order to make sure that home canners may obtain sufficient sugar to preserve perishable fruits and at the same time to place a check upon those who would endeavor to obtain unreasonable quantities for household consumption. The check on consumption will be exercised through the retailers—which is considered a much more satisfactory method than the card system adopted in other countries—chiefly to guard against temporary shortages that may occur if more vessels are diverted from the Cuban trade and at the same time to assure a supply adequate to meet the extensive demand hoped for from home canners.

Retail dealers in all states will be provided by their federal food administration with certificates which must be signed by the consumers before they obtain the amount of sugar needed for home canning. Each certificate has blank spaces for the name of the dealer, the signature and address of the consumer, and the amount needed for canning and preserving purposes only. The certificate must be returned within one week after it is signed to the federal food administrator for the state in which the purchase is made.

In order to build up reserve stocks to take care of the canning demand, jobbers are now permitted to hold sugar sufficient to meet their needs for sixty, instead of thirty days. Where necessity demands, food administrators will have authority to allow the sale of more than 1,000 pounds—the present limit—to retailers. The prescribed limits of retail sales for other than canning purposes will still be maintained—not over five pounds to people living in cities; not more than ten pounds to those living in the country.

Commercial canners in every state will be allowed to increase immediate purchases and gradually to accumulate sufficient sugar to meet full requirements of their 1918 canning operations. The new regulation which permits canners to carry a season's supply does not, however, extend the latitude to manufacturers of less essential foodstuffs.

Beverage and Fruit Sirups Not Subject to License.

The Law Department of the U. S. Food Administration recently issued the following ruling:

Among the food commodities subject to license by the President's Proclamation of October 8, 1917, were "sugar, sirups and molasses."

The sirups intended to be licensed were so-called "table sirups" and not beverage sirups or fruit sirups or medicinal sirups. It is therefore ruled that beverage sirups or fruit sirups, which include coca-cola and other beverage sirups and soda water sirups and medicinal sirups, are not licensed commodities and neither manufacturers nor distributors of such sirups are required to obtain a license to make or handle them.

A. & P. Sales Show Big Gain.

The sales of The Great Atlantic & Pacific Tea Company, Inc., for the fiscal year ending March 2, 1918, were \$126,004,958, against \$75,558,737 for the previous year—an increase of more than 66 per cent. The A. & P. company operates 3,800 stores in twenty-nine states.

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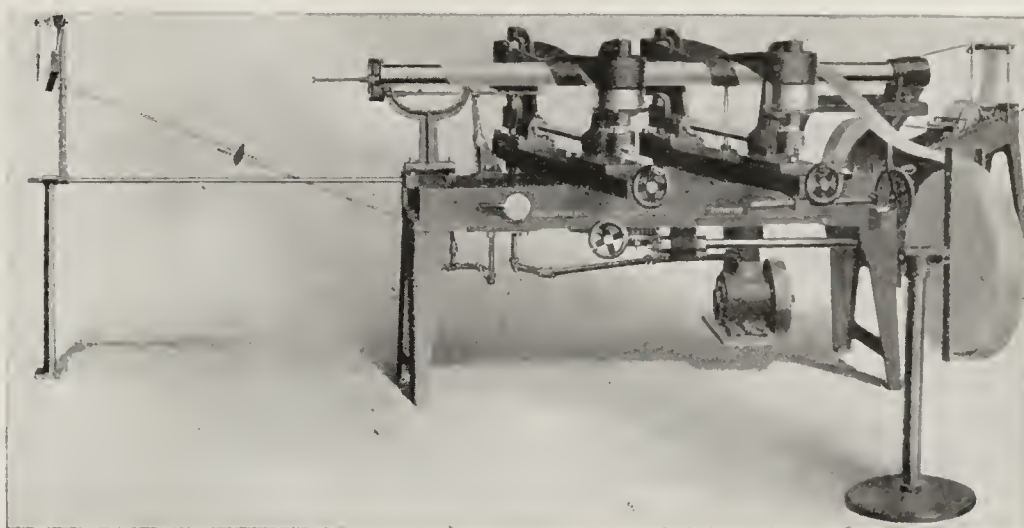
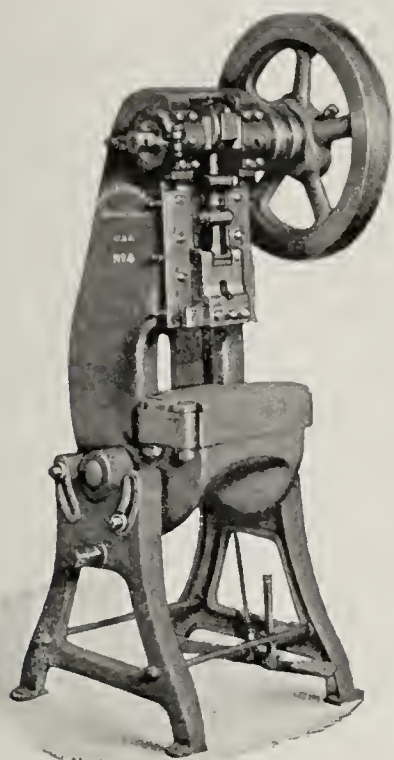
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Maximum Margins That Will Be Allowed Cannery Fixed.

Basing its action on the views of the Federal Trade Commission, the Food Administration announces the maximum margins between cost and selling price that will be allowed licensed cannery per dozen cans. They are maximum margins, to be considered merely as guides, in no way changing existing rules or regulations affecting cannery. Prices exceeding these will be considered unreasonable under the food-control act. The announced maximum margins follow:

- Corn, No. 2, standard, 19 cents.
- Corn, No. 2, extra standard, 22 cents.
- Corn, No. 2, fancy, 30 cents.
- Peas, average, all sizes, No. 2, substandard, 15 cents.
- Peas, average, all sizes, No. 2, standard, 22 cents.
- Peas, average, all sizes, No. 2, fancy, 31 cents.
- Tomatoes, No. 2, standard, 18 cents.
- Tomatoes, No. 2½, standard, 22 cents.
- Tomatoes, No. 3, standard, 27 cents.
- Tomatoes, No. 3, fancy, 31 cents.
- Tomatoes, No. 10, standard, 90 cents.
- Tomatoes, No. 10, fancy, \$1.

Futures in Dried Fruits Cannot Be Contracted for Before June 1.

Contracts for the sale of dried peaches, apples, prunes or raisins from new crop fruits cannot be made before June 1, the Food Administration announced on May 4. The Food Administration originally ruled that dried fruits could be sold by May 1 of the year in which the crop is produced.

The change was announced in the belief that the delay would allow the various interests affected voluntarily to

agree upon a reasonable basis on which business could be done, protecting the producers, manufacturers and consumers.

In the past it has been customary to offer dried fruits for sale as early as the first of the year. The Food Administration believes that by prohibiting such a practice it will eliminate to a great extent the speculative dealing encouraged by sales for future delivery of crops that do not actually exist at the time the contract is made.

No Increase in Ice Prices Unless Necessity Is Proved.

The Food Administration has sent out the following directions to federal food administrators of all states:

The Food Administration is concerned that there should be no profiteering in ice and especially that the cost of ice to those elements of the community which are least able to protect themselves should not be increased over last year unless absolute proof can be given by the ice companies as to the necessity. Any increase in price over that ruling last season to the household consumer will, therefore, justify investigation as to whether it constitutes profiteering.

All ice dealers should be required to file with you any proposed schedule of increased prices before these increases are put into effect, and no increase to the household consumer shall be made until after investigation. Your attention is called to that section of the Food Control Act in which provision is made with regard to unfair practices, and in case of a proposed increase in price you should investigate the tendency to make unreasonably lower prices to commercial users than to domestic consumers, considering at all times cost in distribution. An unreasonable difference would be an unfair practice.

The ice problem is essentially a local problem, and we do not wish to intervene where local dealers do not increase

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prices, or come to an arrangement with municipal authorities which will be satisfactory to both dealer and consumer. If, however, such settlements cannot be made by local authorities in cases where there is an attempt to unreasonably increase prices, we suggest that you investigate and in the first instance endeavor to arbitrate a settlement. Should this fail, please so report, and then we are prepared in the interest of reasonable prices to use all the powers we have, including that of license in any given locality, and to place ice handlers in that locality under the restraints of the food bill. We greatly hope that the matter can be settled by local authorities in all cases, and that as few appeals as possible be made to you. Notify local administrators to bring to your attention any attempts at increase in price, and notify all dealers.

Cheese Dealers In Session.

Men interested in the storage and distribution of cheese and butter have been in Washington for a conference with the United States Food Administration. Discussion centers largely around conditions affecting the storage and distribution of dairy products.

Upon the facts brought out at this conference will be based the rules and regulations soon be formulated by the Food Administration.

Cottonseed Men to Meet In Series of Conferences.

With a view to closer co-operation, conservation, and a better understanding in the cottonseed industry, a series of meetings has been planned in various southern cities under the auspices of the Food Administration. The first tour of this sort planned by the Food Administration, which in this case was represented by Dr. George H. Denny and Mr. Hugh Humphreys, began in New Orleans the first of May.

Commissioners of agriculture and markets, officers of farmers' organizations, farmers, buyers, ginner, and crushers are asked to attend these conferences in order that they may cover every phase of the cottonseed industry. Meetings were held for Louisiana, Texas, Oklahoma, Arkansas, Missouri, Mississippi and Tennessee.

The second tour, beginning May 20, will cover North Carolina, South Carolina, Georgia, Alabama, Florida, and Virginia.

Dealers to Report Holdings of Brazilian Green Coffee.

Because many ships used in the South American trade have been taken over for trans-Atlantic shipping, and in order to insure an equal distribution of green coffee, based proportionately on past requirements of the trade, the Food Administration has issued an order requiring all dealers in green coffee to notify the Food Administration at Washington at once of their entire holdings of Brazilian coffee. These holdings include that which is now afloat and that to be shipped.

Until further notice no buyer of green coffee will be allowed to import into the United States an excess of his percentage of coffee, as shown by the average imports for the calendar years 1916 and 1917. No import license will be approved or permitted that will increase such a percentage.

Retailers Who Should Have Wholesaler's License.

Large sales of licensed commodities by retail stores in sections of the West call attention to the fact that some retailers in that section also do a wholesale business and require a wholesaler's license for the latter operations. A recent case of this sort occurred in Montana, when a general merchant, operating two stores in the central part of the state, was asked to explain unusual sales of licensed commodities. This led to his being required to take out a wholesaler's license by Federal Food Administrator Atkinson.

Refiners of Cottonseed Oil Hold Price-Fixing Conference.

Refiners of cottonseed oil and manufacturers of lard substitutes lately held a conference at the offices of the U. S. Food Administration to discuss the advisability of establishing a maximum price on lard substitutes, as the season of scarcity is rapidly approaching.

The meeting was called at the request of the Food Administration, and after hearing suggestions for bringing about the desired results the Food Administration is now considering rules which are expected to meet the situation.

As the cottonseed crop has been marketed and the entire supply of oil is now in the hands of the manufacturers, the Food Administration proposes to translate the price received by the cottonseed producers into a fair price to be paid by the consumers, permitting only a fair margin of profit for the manufacturers. In this way the annual advance in this material, which occurs during the period of scarcity, will be prevented.

A request to attend the meeting was directed to every manufacturer in the United States. The South, where the industry is largely centered, was well represented, with many representatives from the Central and Eastern States.

Standardizing Corn Meal.

Gurdon W. Wattles, federal food administrator for Nebraska, has appointed a committee of the Nebraska Millers' Association to standardize, so far as possible, the price of corn meal. This committee has determined what will constitute a fair maximum for manufacturing profit and other details entering into milling of corn. A differential is established in the prices of white and yellow corn meal on the basis of the difference in the price of No. 3 white and No. 3 yellow corn. According to the regulations accepted, all millers agreed to use $2\frac{1}{4}$ bushels of corn in making 100 pounds of corn meal, 40 cents is decreed to be a fair manufacturing cost, and the millers may charge $12\frac{1}{2}$ cents profit. An additional 15 cents may be added where the meal is sold in less than carload lots to cover cost of shipping and handling. This charge eliminates jobbers' profits. Under this agreement, the price of white corn meal to the retailers in Omaha, on the Omaha price of \$1.80 for No. 3 white corn, would be \$4.86 $\frac{1}{2}$ per hundred. G. W. Spick, chairman of the millers' committee and president of the Nebraska Millers' Association, says that this agreement should be met by every miller in Nebraska.

Wheat Mill Feed Men Agree on Present Margin Profits.

At the conclusion of a conference with dealers and manufacturers of wheat and mill feeds and the Food Administration it was announced that the margins of profit of wheat mill feeds which have been in effect in the eastern states will be continued there and have been re-established in all states east of the Mississippi River and south of the Ohio River, including Louisiana and Arkansas.

The rule establishing the margins provides that no licensee buying and selling wheat mill feeds as a wholesaler or jobber shall charge more than a reasonable advance over the average bulk price at mill (plus brokerage, commission, or inspection fees actually paid, freight and cost of sacks), of his stock of all such wheat mill feeds on hand or under contract not at that time contracted to be sold; such advance not to exceed the following:

Acid Calcium Phosphate
Acid Ammonium Phosphate
Liquid Acid Phosphate
Baking Powder Materials
Phosphoric Acid
Epsom Salts U. S. P.
Oxalic Acid

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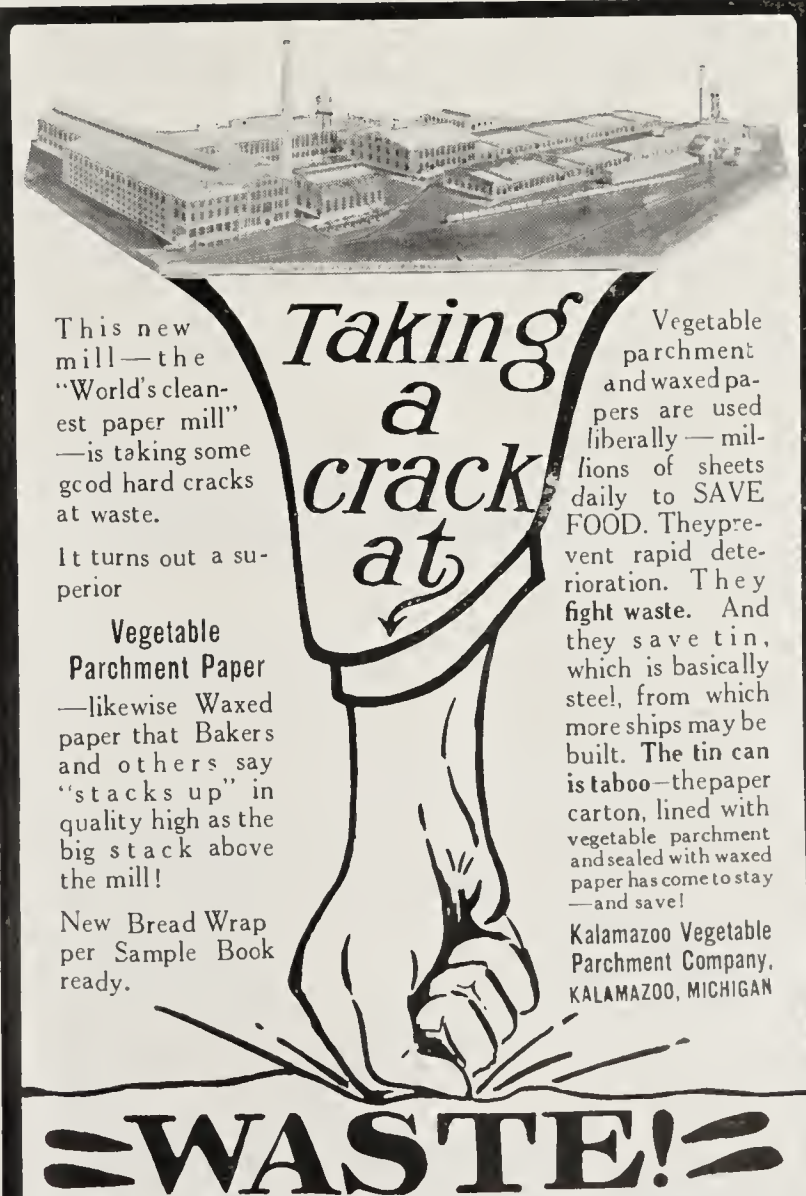
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Largest Manufacturers



This new mill—the "World's cleanest paper mill"—is taking some good hard cracks at waste.

It turns out a superior

Vegetable Parchment Paper
—likewise Waxed paper that Bakers and others say "stacks up" in quality high as the big stack above the mill!

New Bread Wrapper Sample Book ready.

Taking a crack at

Vegetable parchment and waxed papers are used liberally—millions of sheets daily to SAVE FOOD. They prevent rapid deterioration. They fight waste. And they save tin, which is basically steel, from which more ships may be built. The tin can is taboo—the paper carton, lined with vegetable parchment and sealed with waxed paper has come to stay—and save!

Kalamazoo Vegetable Parchment Company, KALAMAZOO, MICHIGAN

=WASTE!=

E. PRITCHARD

Packer and Manufacturer
of the Finest

"EDDYS" BRAND

**Canned Foods,
Jellies, Preserves,
Plum Pudding,
Sauces, Table Delicacies,
and**

PRIDE OF THE FARM Tomato Catsup

=====
**Bridgeton, N. J.
and 331 Spring St., New York**

Whiter—Sweeter—Lighter Bread and Cake

The first essential of success in home baking is to employ a leavener that is pure, thorough and dependable—one that raises evenly, and gives the bread and cake the right texture, and appetizing appearance—and makes them easily digested. The purity, uniform strength and perfect keeping qualities of

Rumford

THE WHOLESOME
BAKING POWDER

insures whiter, sweeter and lighter cake and bread—it raises the baking just right, and adds to the nutritive value, as it restores phosphatic elements equivalent to those which fine wheat flour loses in the process of milling.

Every Housewife, Dietitian, Domestic Science Teacher and Lecturer should have a copy of "Rumford Dainties and Household Helps." We will be pleased to send it free upon request.

RUMFORD CHEMICAL WORKS,
Providence, R. I.

L.71 10.17



Shipment from mill or in transit, payment cash, demand draft or sight draft—\$1 per ton.

Shipment from mill or in transit, sale on arrival draft terms—\$1.50 per ton.

Sale ex-jobbers' warehouse, payment cash, sight draft, or demand draft—\$2.50 per ton.

Sale ex-jobbers' warehouse, upon arrival draft terms—\$3 per ton.

In making sales on credit, not to exceed \$1 per ton may be added to the margin which could be charged if sold on arrival draft terms.

Another meeting for the trade in some of the states not covered by this re-established rule was held in Kansas City, Mo., April 22.

Test of New Exchange Rules to End Speculation in Grain.

Grain exchanges in all parts of the country have entered upon new rules put forward by themselves in restriction of speculation in substitution for price restrictions previously imposed by the exchanges in certain commodities, principally corn and oats.

In opening the markets, Herbert Hoover, in reply to the plan put forward by the exchanges, telegraphed the various boards as follows:

In opening the market in corn and oats for trading in June and July futures without the restrictions of price previously imposed by the exchanges, but with the restrictions provided against speculation by the new rules adopted by the board, I trust that all members of the exchange realize that this is the greatest test that has yet been applied as to whether it is possible to conduct the legitimate and proper function of the grain exchanges in the fixing of contracts for future delivery without this very valuable service of the exchanges becoming a tool for speculative manipulation against the interests of the general public.

It seems to me also that in addition to the restrictions imposed on large trading on speculation that the exchanges should set their faces rigidly against the stimulation of minor speculation through the operation of private wire houses. The majority of the exchange members have long recognized that this type of business in the public mind is akin to bucket-shop stock speculation. I am confident that the plan made by the exchanges is with the faith that these objectives will be accomplished, and if they can be accomplished on the voluntary basis without the interference of federal authority there will have been established the foundation for a wider confidence through the whole country in exchange trading.

The success of the exchanges in solving the problem of the elimination of vicious manipulation of the Nation's foodstuffs, while preserving the economic value of exchanges, has not only a positively necessary importance during the disturbed conditions of war, but of permanent value to the trade, and the country, and the success or failure of the voluntary plan toward these ends rests absolutely upon the officials of the exchanges themselves.

HERBERT HOOVER.

Grain Speculators Warned By the Food Administration.

The regulations on speculation originated by the grain exchanges by which speculative dealing for future delivery was to be strictly limited as distinguished from legitimate forward sales of actual grain have been recently evaded by certain classes of dealers. They were taking advantage of the unlimited right to genuine forward selling by using the possession of certain amounts of actual grain as a basis for constant purchase and resale of futures.

The Food Administration has therefore given a warning that this action amounted to hoarding by withholding such grain from actual movement in the market, and that such speculation would be dealt with by the Administration under the hoarding section of the food bill.

Price of Substitutes Declining.

The bakers in several cities having threatened to raise the price of bread on the ground that the substi-

tutes for wheat flour are more expensive than the wheat flour, the Food Administration has sent to the state food administrators a telegram stating that the prices of substitutes are under regulation and show a marked downward tendency. Corn meal is now obtainable at prices much lower than wheat flour, while corn flour, oats and barley are offered at the same price or lower than wheat flour. The price of substitutes generally is likely to decline still further.

There is therefore no justification for any advance in bread prices.

A Table of Flour Rations.

Federal Food Administrator Charles Hebbard of Washington has worked out a table of flour rations per person per week, arranged according to the number in the family, and according to whether the family does its own baking or buys its Victory bread from the baker.

Flour rations per person per week—	Number in family—				
	2 Lbs.	3 Lbs.	4 Lbs.	5 Lbs.	6 Lbs.
For families doing own baking, using flour for all miscellaneous purposes, including crackers, macaroni, etc.	3	4½	6	7½	9
Families not doing their baking but buying Victory bread from bakers: Bread 3½	3½	5¼	7	8¾	10½
Flour ration for all other purposes, including crackers, macaroni, etc.: Flour 1	1	1½	2	2½	3

Cracker and Biscuit Manufacturers Saved 49 Per Cent Wheat Flour in March.

Cracker and biscuit manufacturers in the United States patriotically conserved wheat flour during the month of March. Although cracker and biscuit manufacturers were not required to use substitutes in their products until April 14, during March, 38 per cent of their total bake was comprised of substitutes for wheat.

The wheat flour used by these manufacturers in March, 1917, totaled 335,000 barrels. Under the regulation of February 4, 1918, which restricted bakers to 70 per cent of their 1918 requirements, these manufacturers' allotment for March, 1918, was 235,000 barrels. The wheat flour they actually used in March, 1918, was 171,000 barrels—a saving of wheat flour in March, 1918, against actual consumption in March, 1917, of 164,000 barrels, or 49 per cent.

Flour Returned Will Cause Direct Increase in Supplies for Army, Navy and Allies.

Stocks of flour given up in response to the Food Administration's recent appeals, the donors may be assured, will provide a direct increase in supplies for the Army and Navy for the Allies.

While it is impossible to ship some of this flour in the packages in which it is returned, the Food Administration has made arrangements to have it put in circulation and an equal amount, properly packed for export, immediately shipped from the mills.

The flour will be stored for the time being at the most convenient points, releasing immediately an equivalent amount that will be sent to Europe in the name of the country or state by which it was tendered.

The cost of repacking for export and the duplication of transport will be avoided, while at the same time the exact quantities given will be released, over and above the present program of sending overseas one-half of the total American supplies. Those who offer their flour to the Government are thus assured that their sacrifice is a direct and immediate help to the fighters and people in Europe.

All of the flour that is given up will be paid for on a fair price basis.

Gives Entire Mill Output to Food Administration.

The U. S. Food Administration has been advised by telegram that the W. R. Setzler Mill & Gin Co., of Wolf City, Tex., has offered the Administration the entire output of its mill until July 1. While many mills have pledged to co-

WM. J. MOXLEY'S "SPECIAL" OLEOMARGARINE

The Taste Is
the Test



Where
Quality and
Economy Meet

Gives better satisfaction than 75 per cent of butter used. Cost one-third less. Try it and be convinced. Order a package from your dealer.

Churned by
WM. J. MOXLEY, Inc., Chicago

TIN and FIBRE CONTAINERS

FOR

Foods, Drugs, Oils

Infinite Variety
Large Capacities
Prompt Deliveries

American Can Company
Chicago New York San Francisco

WITH OFFICES IN ALL LARGE CITIES

operate in the conservation of wheat, the Setzler company is the first to offer its entire output.

The flour abstinence movement is taking a fast hold on Texas. Federal Food Administrator Peden announces that the state has gone on a wheatless basis for 45 days and will extend this period if necessary. The only flour to be consumed, he says, will be small amounts now in the hands of retailers and consumers.

Mr. Peden is of the opinion also that sugar consumption in the household has been cut down to about four pounds per month per capita, but the preserving season, which is now on in his state, will create an increased demand.

"Take the Wheat—We Will Rustle."

"If you need 75,000,000 bushels of wheat for war purposes, take it and let us rustle for ourselves—we have plenty of substitutes," was the telegram recently sent to the Indiana Federal Food Administrator by the Evansville Real Estate Board as evidence of the willingness of its large membership of substantial citizens to back conservation.

Helping Out the French.

Peter Birney, federal food administrator for Brown County, Kans., got busy and furnished enough flour to provide the wheat rations of 8,700 Frenchmen for a month some time ago. Mr. Birney learned that some 300 families, mostly farmers, of his county had laid in a supply of wheat flour last fall sufficient to last them through the year. In ordinary times this would merely be an evidence of thrift, and would be highly commendable, but these are war times, and if every family in the country did as these farmers have done, America would be stripped of wheat in two days. Mr. Birney opened up negotiations with the farmers and secured the return to 5,290 pounds of flour and 790 pounds of sugar. No slackers were found. Every township willingly made its report and turned in its full refund of flour, keeping only enough to supply them under the 50-50 rule. A German farmer turned in 8 sacks of flour, a Swiss turned in 18 sacks.

Pennsylvania Hotels Use No Wheat.

The proprietors of 300 hotels and restaurants in Pennsylvania have pledged that they will use no wheat products in their establishments until August 1, according to a telegram received by the Food Administration.

The pledges followed a four-day campaign inaugurated by the federal food administrator, who states that a large number of clubs in all parts of the state also will abandon the use of wheat.

Save Wheat by Cleaner Thrashing.

Plans to save wheat and other small grains at their source by cleaner thrashing are a new activity of the Food Administration. Best estimates show a preventable loss of more than 3 bushels of grain in every 100 bushels thrashed. This amount, it is believed, can be saved for human consumption by more careful methods and better mechanical condition of thrashing outfits.

In cases of conspicuously poor thrashing nearly 10 per cent of the grain has, in the past, gone into the straw stack. Last fall many farmers in the Central West rethrashed old wheat stacks and recovered large quantities of marketable grain.

A special Grain Thrashing Division has been established under the Food Administration Grain Corporation, with general offices at 42 Broadway, New York City. At the head of the new division is Capt. Kenneth D. Hequembourg, U. S. R., an active wheat producer of Oklahoma, who has had first-hand thrashing experience.

The division has already arranged, as a part of its organization, to have county thrashing committees carry the educational and mechanical activities planned to every thrashing-machine owner and operating crew in the United States. A typical county thrashing committee will consist of the county food administrator, the county agricultural agent, and a retired thrasher representing the state or local council of defense.

Each committee will maintain open headquarters and devote attention to thrashing operations within the county, endeavoring through mechanical assistance and emphasis on methods of conservation to secure a high quality of work.

New Regulations Governing the Packers of Dried Fruit.

Special rules and regulations governing packers of dried fruits as well as wholesalers and retailers of these commodities have been issued by the Food Administration. One of the most important is that licensees shall not offer dried fruits for sale prior to May 1 of the year in which the new crop fruits in question are to be grown and packed, which is much later than they have been accustomed to offer them in former years.

The rules are directed specifically to licensees engaged in the business of preparing or packing dried peaches, apples, prunes, or raisins.

Another rule is that after May 1 "the licensee shall not face or cause to be faced any licensed dried fruits in any package containing over 10 pounds net. Such facing will be regarded as a wasteful practice." Faced fruit packages are those in which the top layer is carefully arranged by hand, and the rule against the practice eliminates labor which adds about one-fourth of a cent a pound to the price of the fruit.

It is also ordered that the licensee shall sell his products for not more than a reasonable advance over the cost of said products and without regard to the market or replacement value at the time of the sale. Packers who quote dried fruit for shipment in car-load lots are directed to mail promptly to the Food Administration at Washington all price lists and circulars relating to prices on the fruits in question.

\$1,000 in Prizes for Best Sandwich Bread Baked Without Using Wheat or Rye Flours.

The Food Administration announced:

In order to enable as many hotels, restaurants, clubs and dining car services as possible to go upon an absolutely wheatless basis, and to insure that those which have already taken the "no wheat" pledge may carry it out with the least possible hardship, John McE. Bowman, who is a practical hotel man, now associated with the Food Administration, has offered prizes, totaling \$1,000, for the best wheatless and ryeless sandwich bread that can be produced by a hotel or restaurant baker.

Five hundred dollars is offered for the loaf that is adjudged the whitest, the most palatable and the best looking and which can be produced at a moderate price. A second prize of \$300, a third of \$150 and a fourth of \$50 will also be given. Neither wheat nor rye in any form may be used.

The competition will be open only to hotel and restaurant bakers. Each contestant must produce a certificate from the proprietor or manager of his hotel or restaurant, guaranteeing that the contestant is an American citizen, that he is a hotel or restaurant baker in good standing and is not employed in an outside bakeshop, that he has worked in his present position for at least six months preceding the date of the contest, and that he has originated and baked the bread entered by him in the contest.

Each contestant must originate and bake one 16-ounce loaf of sandwich bread. This must be so packed as to reach Washington in the best possible condition. It should be sent by parcel post and under a special-delivery stamp. The bread should be accompanied by two typewritten copies of the recipe, in which every step should be briefly but accurately described and the general appearance of the finished product noted. All bread and recipes entered must reach the hotel, restaurant, dining car and steamship division of the Food Administration not later than May 15.

For the information of possible contestants whose bread would have to make a long journey, it was especially stated that the loaf alone would not be the sole basis of award. The recipe accompanying it must pass a thorough test.

Baltimore Milk Ordinance Valid.

The provisions of the Baltimore city milk ordinance have been sustained by the court of appeals. The decision holds that while the requirement of a permit to sell milk was proper, the inspection of dairies was not mandatory under the provisions of the ordinance.

Today's way to please:—

*your Uncle Sam
your family
your pocket book*

HOUSEKEEPERS everywhere are falling in line—with a can of Cottolene.

Cottolene shortens—in the way the Government likes. It gives you wholesome cooking. It gives you delicious eating. It saves animal fats which Uncle Sam says we must save.

Also, Cottolene shortens cooking expense.

Try using one-third less of Cottolene than you ordinarily use of butter or other shortenings. Taste for yourself the result of your own delicious economy.

For the sake of good eating, try the tested war recipe on this page. Ask the family what they think of the *taste* of your patriotic Cottolene economy!



Recipe for "SERVICE COOKIES"

$\frac{1}{2}$ cup Cottolene	$\frac{1}{3}$ cup sugar
2 cups flour	$\frac{1}{3}$ cup honey
$1\frac{1}{2}$ cups oatmeal	Pinch of salt
Scant level teaspoon soda	Cold water

Sift together the flour, oatmeal, salt and soda; add the sugar, then the honey thoroughly blended with the Cottolene. Moisten with enough cold water to make a stiff dough. Mix thoroughly. Roll thin and cut with fancy cutter.

THE N. K. FAIRBANK COMPANY

Cottolene

"The Natural Shortening"

At grocers in tins
of convenient sizes

Notices of Judgment Under the Food and Drugs Act

(Continued from *The Food Law Bulletin*, Vol 13, No. 9.)

5033. Adulteration and alleged misbranding of evaporated Apples.

An article labeled "Evaporated Apples," to which water had been added, was alleged to be adulterated and misbranded. On June 19, 1916, the defendants pled guilty to the charge of adulteration and were fined \$5 and costs. The charge of misbranding was nol-prossed.

5034. Adulteration and misbranding of "Gem Scratch Feed," "Manna Superb Chick Feed," and "Manna Rice Special Chick Feed."

The following three articles were held to be adulterated and misbranded: "Manna Superb Chick Feed," consisting of kafir, corn, millet, wheat, at least 5% weed seeds, and a trace of sunflower seed, labeled "Made from Wheat, Kafir, Millet and Corn"; "Manna Rice Special Chick Feed," labeled "Wheat, Rice, Millet and Kafir Corn," but containing added weed seeds; "Gem Scratch Feed," labeled "Fat 3.5% and "Corn, wheat, kafir, sunflower, buckwheat, barley, oats," but containing only 2.3% fat and added weed seeds. On December 23, 1916, the defendants pled guilty and were fined \$10 and costs.

5035. Misbranding of "Baur's Diamond Brand Bromides."

A granular effervescent salt containing chiefly sodium bicarbonate, citric acid, Epsom salts, and a small amount of caffeine, labeled "Bromides," was held to be misbranded. On October 17, 1916, the defendants pled guilty and were fined \$10.

5036. Adulteration and alleged misbranding of evaporated apples.

See Judgment 5033. Fine \$15 and costs.

5037. Adulteration and misbranding of wine.

An inferior product, artificially colored, probably second pressing or pomace wine, was held to be adulterated and misbranded. On January 31, 1917, the defendants pled nolo contendere and were fined \$20 and costs.

5038. Adulteration and misbranding of "Fluid Extract for Mistra Vegetable Compound."

A solution of oil of fennel and oil of anise in methyl alcohol was held to be adulterated because of the presence of the methyl alcohol, and misbranded because the quantity of the contents was not plainly marked on the outside of the package. On November 13, 1916, the defendants pled guilty and were fined \$5.

5039. Adulteration and misbranding of "Heroin Hydrochl," "Cocaine Hydrochlor," and "Heroin and Teppin Hydrate No. 2."

The following three articles were held to be adulterated and misbranded: an article labeled "Heroin Hydrochl, 1-50 Grain," but containing from 0.01 to 0.011 grains heroin hydrochlorid per tablet; an article labeled "Cocaine Hydrochl, 1/8 Grain," but containing from 0.048 to 0.05 grain per tablet of cocaine hydrochlorid; an article labeled "Heroin 1/24 Gr., Terpin Hydrate 2 1/2 Gr.," but containing from 0.012 to 0.016 grain heroin per tablet and from 1.43 to 1.55 grains terpin hydrate per tablet. On September 18, 1916, the defendants pled guilty and were fined \$75.

5040. Adulteration of tomato stock.

Decayed, decomposed, filthy and putrid tomatoes were held to be adulterated. On November 15, 1916, the jury gave a verdict of guilty and on November 13, 1916, the product was ordered destroyed, the claimant to pay the costs.

5041. Adulteration of paregoric.

Paregoric containing 0.64 grain of opium per fluid ounce, or approximately 1.4 grams of powdered opium per 1,000 cc., instead of the 4 grains per 1,000 cc. required by the U. S. P., and with no statement on the container of the standard of strength, purity and quality, was held to be adulterated. On April 24, 1916, the defendants pled guilty and were fined \$20.

5042. Adulteration and alleged misbranding of paregoric and adulteration of soap liniment.

Paregoric containing 3 grams powdered opium per 1,000 cc. instead of the 4 grams required by the U. S. P., and with no statement on the container of the standard of strength, quality and purity, and soap liniment containing not over 18.9 grams camphor per 1,000 cc., instead of the 45 grams required by the U. S. P., and with no state-

ment on the container of the standard of strength, quality and purity, were alleged to be adulterated and misbranded. On April 27, 1916, the defendants pled guilty to the charge of adulteration and were fined \$30. The charge of misbranding was nol-prossed.

5043. Misbranding and alleged adulteration of paregoric, sweet spirits of nitre, and soap liniment.

Misbranding and adulteration were alleged of the following three articles: an article labeled "Paregoric U. S. P." and "Contains * * * 1.9 grs. Powd. Opium to ounce; but containing 1.3 grains powdered opium per fluid ounce; an article labeled "Sweet Spts. Nitre U. S. P." and "Contains * * * 17.5 grs. Ethyl nitrate in oz.," but containing 1.6 grains ethyl nitrite per fluid ounce; an article labeled "Contains 68.8% alcohol," but containing 36.86% ethyl alcohol. On July 11, 1916, the defendants pled guilty to the charge of misbranding and were fined \$30. The charge of adulteration was nol-prossed.

5044. Adulteration of oysters.

Partially filthy, putrid and decomposed oysters were held to be adulterated. On January 25, 1917, they were ordered destroyed.

5045. Adulteration of oysters.

See Judgment 5044.

5046. Adulteration of oysters.

See Judgment 5044.

5047. Adulteration of tomato ketchup.

Partially decomposed tomato ketchup was held to be adulterated. On December 6, 1915, it was ordered destroyed and the containers released to claimants, the claimants to pay the costs.

5048. Adulteration and misbranding of cottonseed meal.

Cottonseed meal to which at least 56% cottonseed hulls had been added was held to be adulterated. Misbranding was held because the meal was labeled "* * * Cottonseed Meal," "Protein 25 to 35 per cent," "Guaranteed not less than 20 per cent Protein," "Carbohydrates (Sugar and Starch), 35 per cent," although it contained actually only 19.63% protein and 3.45% sugar and starch. On January 5, 1917, the defendants pled guilty and were fined \$50.

5049. Misbranding and alleged adulteration of manteca.

An article labeled "Manteca Artificial" (lard substitute), to which water had been added, was alleged to be adulterated and misbranded. On November 15, 1916, the defendants pled guilty to the charge of misbranding and were fined \$25. The charge of adulteration was nol-prossed.

5050. Adulteration and misbranding of fernet-branca.

An imitation fernet-branca of domestic origin, labeled in Italian, was held to be adulterated and misbranded. On November 20, 1916, the defendants pled guilty and were fined \$25.

5051. Adulteration of oysters.

Oysters to which water had been added were held to be adulterated. On March 15, 1916, the defendants pled guilty and were fined \$10.

5052. Adulteration and misbranding of "Pure Northern Ohio Sugar."

Maple sugar to which brown sugar had been added was held to be adulterated. Misbranding was held because of the fraudulent nature of the labeling, "Northern Ohio Sugar" and "Pride of Northern Ohio Sugar," and because the word "imitation" was not included on the label. On January 31, 1916, the defendants pled nolo contendere and were fined \$35 and costs.

5053. Adulteration and alleged misbranding of evaporated apples.

See Judgment 5033.

5054. Adulteration of evaporated apples.

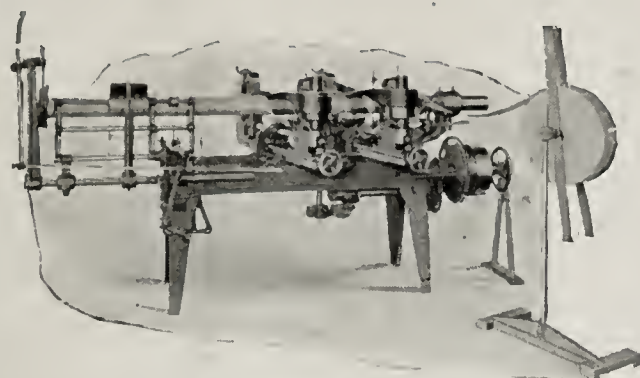
Evaporated apples to which water had been added were held to be adulterated. On June 19, 1916, the defendants pled guilty and were fined \$2.50 and costs.

5055. Adulteration and misbranding of evaporated apples.

See Judgment 5033. Fine \$140 and costs.

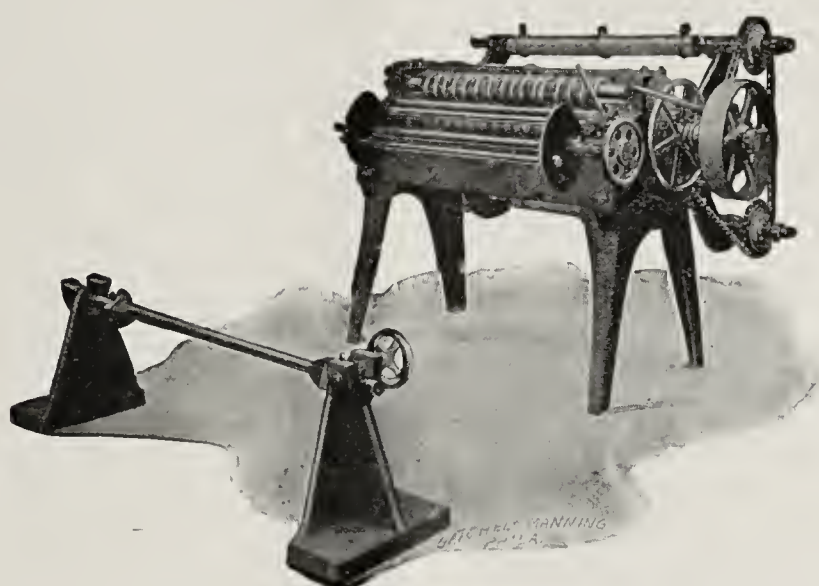
5056. Adulteration of jam.

Partially decomposed jam was held to be adulterated. On March 23, 1916, no claimant having appeared, it was ordered destroyed.

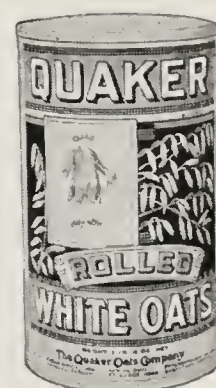


TUBE WINDING MACHINE

MACHINERY FOR PAPER CANS



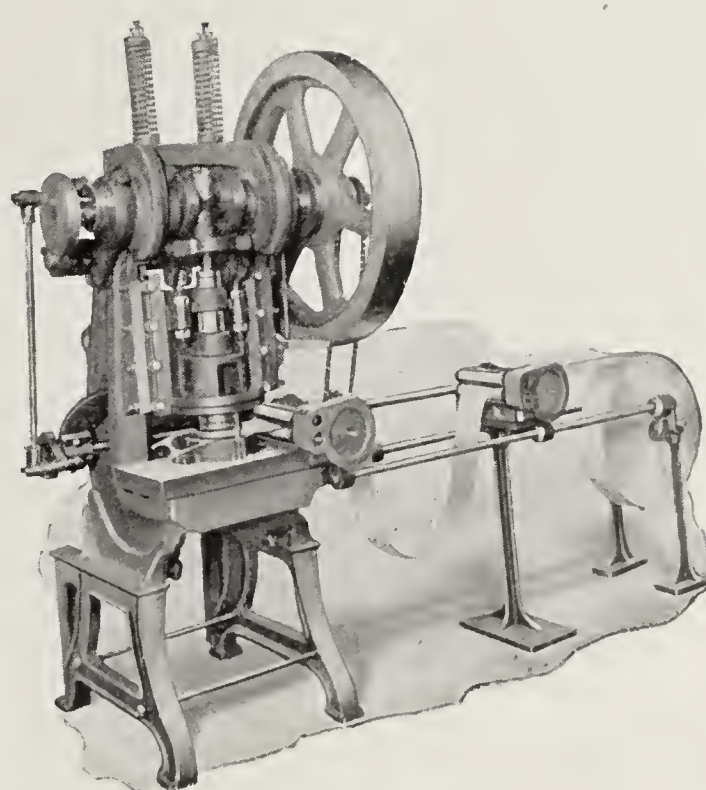
SLITTER AND REWINDER



**SAMUEL M. LANGSTON
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CANADIAN FAIRBANKS-MORSE CO., Agents for Canada



DOUBLE ACTING PRESS

5057. Misbranding of cognac.

A domestic brandy labeled "Cognac" with other words in French, was held to be misbranded. On November 6, 1916, the defendants pled guilty and were fined \$20.

5058. Adulteration of sardines.

Partially decomposed sardines were held to be adulterated. On June 29, 1916, they were ordered examined by a representative of the Department of Agriculture, the fit portion to be delivered to claimants upon payment of the costs, the rest to be destroyed.

5059. Adulteration of pork and beans.

Filthy and decomposed pork and beans was held to be adulterated. On October 31, 1916, a jury gave a verdict of guilty and on February 2, 1917, the product was ordered released to claimants upon payment of the costs, amounting to \$875.37, and execution of a \$3,000 bond.

5060. Adulteration and misbranding of cognac brandy essence.

A diluted solution of methyl alcohol, flavored and colored, labeled, "Brandy-Cognac-Brandy * * *," not corrected by "Compound flavor" and "artificially * * * colored" in inconspicuous type, was held to be adulterated and misbranded. On November 13, 1916, the defendants pled guilty and were fined \$5.

5061. Adulteration and misbranding of grape juice.

Unfermented grape juice diluted with sugar and water, labeled "Unfermented Catawba Grape Juice," not corrected by "Modified and Sweetened with Cane Sugar" on the neck label of the bottle, was held to be adulterated and misbranded. On October 11, 1916, the defendants pled guilty and were fined \$25 and costs.

5062. Adulteration of beans.

Decomposed and filthy beans of which 16 per cent consisted of added stones were held to be adulterated. On August 18, 1916, the portion unfit for human food was ordered ground up for animal food and the fit portion delivered to claimants upon payment of costs and execution of a \$1,000 bond, conditioned that the product be repicked at claimants' expense, under the supervision of a food and drug inspector of the Department of Agriculture.

5063. Misbranding of "S. B. Cough & Consumption Remedy."

A hydroalcoholic solution consisting essentially of morphine sulphate, chloroform, tar, sugar and traces of umbelliferone-like principle, was held to be misbranded because of its fraudulent claim on the labels as a remedy for consumption, whooping cough, influenza, hoarseness, and anything which has a tendency toward consumption. On August 12, 1916, the defendants pled guilty and were fined \$100.

5064. Adulteration of beans.

Decomposed and filthy beans were held to be adulterated. On August 24, 1916, the unfit portion was ordered ground up for animal food, the fit portion delivered to claimants upon payment of costs and execution of a \$1,000 bond, conditioned that they be repicked under the supervision of a representative of the Department of Agriculture.

5065. Adulteration of eggs.

Partially filthy and decomposed eggs were held to be adulterated. On October 10, 1916, the defendants pled guilty and were fined \$100 and costs.

5066. Adulteration of beans.

Partially decomposed beans were held to be adulterated. On December 13, 1916, the defendants pled guilty and were fined \$50.

5067. Adulteration and misbranding of pie and tart filler.

Products consisting in part of fruits other than raspberry or strawberry, colored with amaranth, and labeled "Pie and Tart Filler Raspberry" (or "Strawberry"), were held to be adulterated and misbranded. On August 19, 1916, the defendants pled guilty and were fined \$40.

5068. Adulteration and misbranding of malt sprouts.

Malt sprouts of which 14% was added chaff, malt and weed seeds, was held to be adulterated and misbranded. On August 3, 1916, the defendants pled guilty and were fined \$10.

5069. Adulteration and misbranding of sweet cider and strawberry soda.

A mixture of boiled cider and water with no declaration of net contents on the package, labeled "Sweet Cider," was held to be adulterated and misbranded. An article containing saccharin, the containers being short volume, was also held to be adulterated and misbranded. On October 4, 1916, the defendants pled guilty and were fined \$70.

5070. Adulteration and misbranding of cognac type brandy and fine old cognac.

Products consisting of imitation brandy of domestic origin, largely neutral spirits, and labeled respectively "Cognac Type Brandy" and "Fine Old Cognac," were held to be adulterated and misbranded. On March 7, 1917, the defendants pled guilty and were fined \$100 and costs.

5071. Adulteration of ketchup.

Filthy, putrid and decomposed ketchup was held to be adulterated. On September 28, 1916, the defendants pled guilty and on October 3, 1916, were fined \$500.

5072. Alleged adulteration and misbranding of oil of birch.

An article consisting of only 25% oil of birch and the rest methyl salicylate was alleged to be adulterated and misbranded. On September 19, 1916, a jury gave a verdict of not guilty.

5073. Adulteration of tomato pulp.

Partially filthy and decomposed tomato pulp was held to be adulterated. On February 14, 1917, no claimant having appeared, it was ordered destroyed, the consignees to pay the costs.

5074. Adulteration of compound ketchup.

Decomposed and putrid compound ketchup was held to be adulterated. On February 10, 1916, no claimant having appeared, it was ordered destroyed.

5075. Adulteration of beans.

See Judgment 5064.

5076. Adulteration and misbranding of vinegar.

Cider vinegar to which diluted acetic acid, or distilled vinegar, and phosphates had been added, labeled "Pure Cider Vinegar. Reduced to 4 per cent," was held to be adulterated and misbranded. On November 10, 1916, the defendants having failed to appear, they were fined \$300 and costs.

5077. Adulteration and misbranding of orangeade and wild cherry cider.

The following two articles were held to be adulterated and misbranded: an imitation orangeade, consisting of a sugar sirup flavored with citric acid and artificially colored with coal-tar dye and cochineal, labeled "Concentrated Syrups * * * Orangeade" and "Prepared with 1/10 of 1 per cent Benzoate of Soda and added vegetable color"; an imitation concentrated wild cherry cider sirup, consisting of an artificially colored and flavored sirup, labeled "Concentrated Syrups * * * Wild Cherry Cider" and "Prepared with 1/10 of 1 per cent Benzoate of Soda and added vegetable color." On July 7, 1916, the defendants pled guilty and were fined \$100.

5078. Misbranding of cane sirup.

An article labeled on the cans "Net Weight 9 Lbs. and 3 Ozs.," containing an average shortage in weight of 10.17%, with no statement of the quantity of the contents on the outside of the package, was held to be misbranded. On December 4, 1916, the defendants pled guilty and were fined \$10 and costs.

5079. Adulteration and misbranding of vinegar.

Vinegar to which water had been added, with no statement on the outside of the barrels of the quantity of the contents, and with a shortage of contents from that indicated, was held to be adulterated and misbranded. On August 4, 1916, it was ordered released to claimants upon filing of a bond, the barrels to be relabeled "Cider vinegar, reduced with water to 4½ per cent acid strength," with the true contents in gallons, the claimants to pay the costs.

5080. Adulteration and misbranding of vinegar.

See Judgment 5079.

5081. Misbranding of cottonseed meal.

Meal labeled "Guarantee, Protein 38.62 Per Cent Minimum * * * Ammonia 7.50 Per cent Minimum, Nitrogen 6.18 Per Cent Minimum, Crude Fibre 12 Per Cent Maximum," was held to be misbranded because it contained 35.17% crude protein, 6.84% ammonia, 5.63% nitrogen and 15.84% fiber. On December 1, 1916, the defendants pled guilty and were fined \$100 and costs.

5082. Adulteration and misbranding of "Pastifico Elettrico Moderno" (macaroni).

Macaroni of domestic origin produced from wheat inferior in preparation of macaroni to durum wheat semolina, artificially colored, and labeled in Italian, was held to be adulterated and misbranded. On November 24, 1916, the defendants pled nolo contendere and were fined \$25.

5083. Adulteration and misbranding of spirits of turpentine.

An article containing petroleum benzin, kerosene, or similar hydrocarbons, and sold as "Spirits of Turpentine."

An illustration for a Carnation Milk advertisement. It depicts a woman in a long, dark dress and a young girl in a light dress standing on a grassy hill, looking out over a vast landscape. The landscape features a winding river, several cows grazing, and a large, snow-capped mountain in the background. In the foreground, there are two cans of Carnation Milk and a picnic basket filled with various items. The text 'Carnation Milk' is prominently displayed at the top in a large, bold, serif font. Below it, the phrase 'From Contented Cows' is written in a smaller, italicized font. At the bottom left of the illustration, the text 'For every milk use' is written in a bold, sans-serif font.

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"Remember—Your Grocer can supply you with Carnation"

which is not permitted by the U. S. P. to contain these ingredients, and with no statement on the containers of the standard of strength, purity or quality, was held to be adulterated and misbranded. On September 15, 1916, the defendants pled guilty and were fined \$25.

5084. Misbranding of "Gowan's Preparation."

A wool-fat vehicle containing about 12% camphor and 0.7% quinine sulphate and 20% water, was held to be misbranded because of its fraudulent claims as a treatment for pleurisy, pneumonia, croup, throat troubles, rheumatism, felons, carbuncles, piles, stiff joints, sore throat, tonsillitis, grippe, whooping cough, congested lungs, difficult breathing, pains in the chest and lungs, catarrh, neuralgia, fever and soreness and swelling in the abdomen. On October 10, 1916, the defendants pled guilty and were fined \$25 and costs.

5085. Misbranding of "Urol."

A solution of volatile oils in balsam was held to be misbranded because of its fraudulent claims as a remedy for diseases of the kidneys, bladder and urethral canal, a relief for acute nephritis, a remedy for congestion of the kidneys, chronic urethritis and cystitis, a cure for gonorrhea and cystitis. On January 12, 1917, the defendants pled guilty and were fined \$50.

5086. Adulteration of vinegar.

Vinegar to which dilute acetic acid had been added was held to be adulterated. On July 29, 1916, claimants having admitted the allegations, the article was ordered released to them upon payment of costs and a \$1,500 bond, conditioned that it be properly relabeled.

5087. Adulteration and misbranding of creme de menthe essence.

An artificial peppermint flavor for use in the preparation of imitation liquors, containing methyl alcohol, and labeled "Creme De Menthe Menta Verde * * *," not corrected by "Compound * * * Flavor" and "Artificially * * * Colored" in inconspicuous type, was held to be adulterated and misbranded. On November 13, 1916, the defendants pled guilty and were fined \$5.

5088. Adulteration and misbranding of beans.

Partially decomposed beans containing annatto, a coloring matter, but no appreciable amount of tomato sauce, labeled "Beans with Tomato Sauce," were held to be adulterated and misbranded. On July 17, 1916, the claimants denied the allegations. On December 4, 1916, the jury gave a verdict against the claimants, they having failed to appear. On December 4, 1916, the product was ordered destroyed, costs to be paid by claimants.

5089. Misbranding of "The Boxenbaum Discovery."

An aqueous solution of potassium bromid with a small amount of a cathartic drug product, was held to be misbranded because of its fraudulent claims as a marvelous and speedy remedy for the cure of epilepsy, convulsions and spasms, and as the only effective remedy for epileptic fits. On July 10, 1916, the defendants pled guilty and were fined \$10.

5090. Adulteration and misbranding of beans.

Filthy and decomposed beans in packages which contained no statement of the weight or measure of the contents were held to be adulterated and misbranded. On September 1, 1916, claimants having admitted the allegations, the product was ordered delivered to them upon payment of costs and a \$1,000 bond, conditioned that it be properly labeled before being disposed of.

5091. Adulteration of red kidney beans.

Filthy and decomposed cull beans were held to be adulterated. On October 26, 1916, no claimant having appeared, the product was ordered destroyed.

5092. Adulteration of pork and beans.

Partially decomposed pork and beans was held to be adulterated. On November 11, 1916, no claimant having appeared, it was ordered destroyed.

5093. Adulteration and misbranding of compound vanilla.

A hydroalcoholic solution of vanilla and coumarin colored with caramel, containing little or no vanilla, and labeled "Compound Vanilla," as though it were concentrated or had added strength, was held to be adulterated and misbranded. On November 8, 1916, the defendants pled guilty and were fined \$25.

5094. Adulteration of fernet.

An article to which methyl alcohol, a poisonous ingredient, had been added, was held to be adulterated. On December 11, 1916, the defendants pled guilty and were fined \$25.

5095. Adulteration and misbranding of pork and beans.

Partially decomposed pork and beans colored with an-

natto, with no tomato sauce present, but labeled "In Tomato Sauce," was held to be adulterated and misbranded. On September 11, 1916, it was ordered delivered to claimants upon payment of costs and a \$1,000 bond.

5096. Adulteration and misbranding of vinegar.

Vinegar to which dilute acetic acid had been added, labeled "Apple Cider Vinegar," was held to be adulterated and misbranded. On September 7, 1916, claimants having admitted the allegations, it was ordered delivered to them upon payment of the costs and a \$600 bond.

5097. Adulteration of canned pork and beans.

Partially decomposed pork and beans, some of the beans being affected by anthracnose, and the rest being blighted and ground-rot beans, was held to be adulterated. On July 5, 1916, no claimant having appeared, it was ordered destroyed.

5098. Adulteration and misbranding of creme de apricot and ferro-china bitters.

The following two articles were held to be adulterated and misbranded: an artificially colored and flavored cordial of domestic origin prepared to imitate apricot cordial, labeled "Creme de Apricot," and other Italian words, the quantity of the contents not being plainly marked on the outside of the package; a hydroalcoholic solution, slightly bitter in taste, acid in reaction, and colored with caramel, of domestic origin, and containing only mere traces of iron and cinchona, although labeled "Iron Cinchona Bitters" and other words in Italian. On August 4, 1916, the defendants pled guilty and were fined \$200.

5099. Adulteration of pork and beans.

Filthy and decomposed pork and beans, colored with annatto, was held to be adulterated. On March 6, 1917, it was ordered destroyed, the costs to be paid by the claimants.

5100. Adulteration and misbranding of "Hampton Springs Water."

Filthy, putrid and decomposed water was held to be adulterated, and to be misbranded because of the fraudulent nature of its claims as a treatment for indigestion, rheumatism, dyspepsia, stomach, liver, skin, kidney and bladder troubles, and because the quantity of the contents was not plainly marked on the outside of the packages. On January 4, 1917, the defendants pled not guilty and on January 5, 1917, a jury gave a verdict of guilty of adulteration and of misbranding under the second head. Defendants were fined \$100.

5101. Adulteration of beans.

Colored and decomposed beans were held to be adulterated. On February 15, 1917, no claimant having appeared, they were ordered destroyed.

5102. Adulteration of milk.

Milk to which water had been added was held to be adulterated. On December 5, 1916, the defendants pled guilty and were fined \$25.

5103. Adulteration of pork and beans.

Decomposed pork and beans was held to be adulterated. On February 15, 1917, no claimant having appeared, it was ordered destroyed.

5104. Adulteration of pork and beans with tomato sauce.

Partially decomposed pork and beans with tomato sauce was held to be adulterated. On October 26, 1916, it was ordered delivered to claimants upon payment of costs and execution of a \$1,000 bond.

5105. Adulteration of pork and beans.

See Judgment 5092. Ordered redelivered to claimants upon payments of costs and execution of a \$1,000 bond.

5106. Adulteration of dried fruit (peaches).

Partially decomposed and filthy dried peaches were held to be adulterated. On July 17, 1916, they were ordered destroyed.

5107. Misbranding of lithia water.

An imitation lithia water, labeled "* * * Lithia Water," was held to be misbranded. On November 20, 1916, the defendants pled guilty and were fined \$25.

5108. Adulteration and misbranding of cognac.

An imitation cognac brandy consisting largely of neutral spirits of domestic origin, labeled "Cognac," not corrected by "Type" in inconspicuous type, and other words in French, was held to be adulterated and misbranded. On November 6, 1916, the defendants pled guilty and were fined \$20.

5109. Adulteration of tomato pulp.

Filthy and decomposed tomato pulp was held to be adulterated. On October 10, 1916, the defendants pled nolo contendere and were fined \$10 and costs.

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DRYING SYSTEMS, Inc.

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5110. Misbranding of "Brazilian Balm."

Misbranding was held because of the fraudulent nature of the claims of the article as a remedy for coughs, colds, grippe, croup, hay fever, catarrh, asthma, and a preventive of pneumonia, or a cure for it in three or four days. On August 28, 1916, the article was ordered delivered to claimants upon payment of costs and execution of a \$500 bond.

5111. Misbranding of Tweed's brand pure malt whisky.

Misbranding was held because a product of domestic origin was labeled " * * * Distilled by the most approved Canadian Method * * * ." On October 21, 1916, the defendants pled guilty and were fined \$50.

5112. Adulteration of tomato pulp.

Partially decomposed tomato pulp was held to be adulterated. On October 26, 1916, no claimant having appeared, it was ordered destroyed.

5113. Adulteration of pork and beans.

See Judgment 5092.

5114. Adulteration of beans.

Partially filthy and decomposed beans, artificially colored, were held to be adulterated. On October 30, 1916, no claimant having appeared, they were ordered destroyed.

5115. Adulteration and misbranding of pork and beans.

Filthy and decomposed pork and beans, containing a large quantity of annatto, an artificial coloring matter, the labels not truthfully stating the nature of the contents, was held to be adulterated and misbranded. On February 5, 1917, it was ordered sold, the purchaser to give a \$1,000 bond, conditioned that it would not be sold or transported in interstate commerce, the costs to be paid out of the proceeds of the sale.

5116. Adulteration of "Marco Dairy Feed."

An article purporting to consist of alfalfa meal, molasses and hominy feed meal, but containing added cottonseed hulls, was held to be adulterated. On February 23, 1917, it was ordered released to claimants upon payment of costs and execution of a \$250 bond.

5117. Adulteration of "Marco Feed."

An article purporting to consist of alfalfa meal, molasses, cracked corn and oats, but containing added cottonseed hulls, was held to be adulterated. On February 23, 1917, it was ordered released to claimants upon payment of costs and execution of a \$250 bond.

5118. Adulteration of "Marco Dairy Feed."

See Judgment 5116.

5119. Adulteration of "Marco Dairy Feed."

See Judgment 5116.

5120. Misbranding of "Tablets Creavita."

Flat, pink, sugar-coated tablets, containing essentially chromium sulphate, calcium carbonate, phenolphthalein, strychnine and starch, brucine being indicated, were held to be misbranded because of the fraudulent nature of their claims, as: a remedy for nervousness, nervous debility, sexual debility, nervous exhaustion; and effective in the treatment of the peculiar affections of women and all abnormal cases of the feminine system without exception, including irregularity of menstruation, pains caused by the relaxation or dislocation of the uterus, leucorrhea, nervous hysteria, pains in the back and groin, weight of the lower part of the abdomen attributable to affections of the uterus and other analogous causes; and as a remedy for irregular and painful menstruation; and effective for giving life and vigor to the genital organs of woman, thus causing all her ailments to disappear and her sufferings to cease. On November 6, 1916, the defendants pled guilty and judgment was suspended.

5121. Adulteration of pork and beans.

Decomposed pork and beans were held to be adulterated. On July 18, 1916, it was ordered released to claimants upon payment of costs and execution of a \$500 bond.

5122. Misbranding of "Old Lady Fulton's Comforting Pills."

Pills composed essentially of reduced iron, strychnine and an emodin-bearing drug, were held to be misbranded because of their fraudulent claims on the labels as: effective for purifying the blood, and a cure for leucorrhea, amenorrhea, irregularities of the menstrual period of women, exhaustion, tuberculosis, sterility, headache, dyspepsia, gastralgia, ictericia, scrofula, swelling, obesity, tumors on the eyelids, pimples, poor nutrition, and lack of appetite. On November 8, 1916, the defendants pled guilty and were fined \$10.

5123. Misbranding of "Elastic Capsules."

Gelatin capsules containing essentially oil of cubeb and balsam of copaiba were held to be misbranded because of their fraudulent claims on the labels as effective for the

relief and cure of gonorrhea, gleet, and all discharges resulting from an inflamed condition of the urinary passages. On September 12, 1916, the defendants pled guilty and were fined \$25.

5124. Misbranding of "Victor Injection," "Victor Remedies * * * No. 19 Compound," and "Victor Remedies * * * No. 6 Compound."

The following three articles were held to be misbranded: an aqueous solution of ichthyol, claiming on its labels to be the all surpassing remedy for gonorrhea and gleet; a product consisting essentially of milk sugar (lactose), with 0.22% ash found and synthetic products, arsenic and alkaloids absent, claiming on its labels to be a remedy for soft and hard chancre and bubo, and effective in all stages of the disease to promote the discharge of pus, reduce the induration, and hasten the healing of the ulcers and bubo; a product consisting essentially of milk sugar (lactose) with a minute trace of arsenic, with 0.12% ash found and synthetic products and alkaloids absent, claiming on its labels to be the great remedy for tuberculosis of the lungs or consumption, tuberculosis of the larynx, obstinate coughs, all inveterate affections of the lungs, larynx, bronchial tubes and air passages. On October 30, 1916, a jury gave a verdict of guilty and the defendants were fined \$600.

5125. Misbranding of "Hemogenas Pills."

Pills composed essentially of reduced iron, a small amount of an unidentified alkaloid, an emodin-bearing drug, phosphorus compounds, with rhubarb indicated and strychnine absent, were held to be misbranded because of the fraudulent nature of their claims on the labels as effective for purifying the blood, as a remedy for general debility, in consequence of exhaustion, palpitations of the heart, headaches, deafness, noise in the ears, seasickness, failing of the menstrual period of women, swellings, poor nutrition and pimples. On November 8, 1916, the defendants pled guilty and were fined \$10.

5126. Misbranding of "Restorative Tablets 'Fountain of Health.'"

Sugar-coated tablets, colored pink on the outside, containing essentially reduced iron, quinine, strychnine, and a drug containing emodin, were held to be misbranded because of the fraudulent nature of their claims on the labels as an infallible cure for all diseases which come from impoverishment of the blood, such as chlorosis, sexual impotence, seasickness, headache, bad digestion, lack of appetite, insomnia, rheumatism, suppression of the menstrual period in women, swellings, cutaneous blotches, palpitations of the heart, and neurasthenia. On November 8, 1916, the defendants pled guilty and were fined \$10.

5127. Adulteration of pork and beans.

See Judgment 5121.

5128. Adulteration and misbranding of olive oil.

Olive oil to which had been added 25% cottonseed oil, of domestic origin, labeled "Olive Oil," with other words in Italian, was held to be adulterated and misbranded. On August 24, 1916, it was ordered delivered to claimants upon payment of costs and execution of a \$900 bond, conditioned that it be properly relabeled.

5129. Adulteration of pork and beans.

See Judgment 5121. "Good and sufficient" bond.

5130. Misbranding of "Denn's Strong, Sure, Safe and Speedy Stomach, Liver, Kidney and Rheumatism Remedy."

A product consisting of 8.2% alcohol, 56.8% solids, 50.9% sucrose, a trace of glycerin, with licorice and cascara sagrada indicated, was held to be misbranded because its labels bore no statement of the quantity or proportion of alcohol and because of the fraudulent nature of its claims on the labels, as: effective to remove all headache and dullness caused by disordered kidneys; and a cure for every kind of liver, kidney, and stomach trouble, and rheumatism; a cure for stomach and blood diseases; and effective in cleansing the blood and in making rich and pure blood. On August 18, 1916, the defendants pled guilty and were fined \$75 and costs. On August 22, 1916, the fine was reduced to \$50.

5131. Misbranding of "Dr. Navaun's Mexican Lung Balm" and "Dr. Navaun's Kidney Tablets."

The following two articles were held to be misbranded because of the fraudulent nature of their claims on the labels: a syrup containing vegetable extractives and small quantities of chloroform and alcohol, claiming to be a remedy for croup, bronchitis, whooping cough and lung complaint, coughs, colds, hoarseness; sugar-coated tablets containing methylene blue, potassium nitrate, juniper,

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and a large amount of ash which was chiefly calcium carbonate, claiming to be a specific for kidney diseases, a cure for backache, weak and congested kidneys, inflammation of the bladder and all urinary troubles, dyspepsia, constipation, asthma, eczema, headache, rheumatism, all skin diseases, and insomnia, and labeled "This remedy is a vegetable compound," although it consisted in part of mineral substances. On August 29, 1916, the defendants pled guilty and were fined \$50.

5132. Adulteration and misbranding of vinegar.

A mixture of either distilled vinegar or dilute acetic acid and apple vinegar, artificially colored, labeled "Pure Apple Cider * * * Vinegar" or "Apple Vinegar diluted to 4% acid strength," was held to be adulterated and misbranded. On December 4, 1916, the defendants pled guilty and were fined \$150 and costs.

5133. Adulteration of beans.

Partially decomposed and filthy beans were held to be adulterated. On June 29, 1916, no claimant having appeared, they were ordered destroyed.

5134. Adulteration and misbranding of pepper.

Black pepper to which pepper shells had been added, labeled "Strictly Pure Black Pepper," was held to be adulterated and misbranded. On October 27, 1916, the defendants pled guilty and were fined \$60.

5135. Adulteration and misbranding of pork and beans.

Partially decomposed pork and beans, labeled "Select Quality," was held to be adulterated and misbranded. On December 4, 1916, no appearance being made at the trial by the libelee, the jury was directed to give a verdict for the Government. On December 5, 1916, the product was ordered destroyed, the costs, amounting to \$233.54, to be paid by claimants.

5136. Misbranding of "Dr. Charles De Grath's Electric Oil 'King of Pain.'"

An article consisting essentially of fixed saponifiable oil or oils, turpentine, oil of cinnamon, ammonium compounds, 0.139 gram chloroform per 100 cc. or 4.5 minims per fluid ounce, with a small amount of mineral oil indicated, was held to be misbranded because the package bore no statement of the quantity of proportion of the chloroform, and because of its fraudulent claims on the labels, as: a safe and efficient remedy for deafness, paralysis, headache, sore throat, scrofula, salt rheum, sprains, pains and aches, generally; a specific for rheumatism, neuralgia, gout, lumbago, sciatica, stiff neck, sore joints, pain in the back, limbs, sides and chest, sprains, bites of poisonous reptiles, inflamed breasts, and sore nipples, and a remedy for pains accompanying fevers and malignant diseases, cholera, and all sorts of pains and inflammatory swellings. On November 6, 1916, the defendants pled guilty and were fined \$20.

5137. Adulteration of tomato ketchup.

Partially decomposed tomato ketchup was held to be adulterated. On August 2, 1916, no claimant having appeared, it was ordered destroyed.

5138. Adulteration and misbranding of "Marischino Yochim Freres Liqueur Cordiale."

An imitation maraschino artificially flavored, and of domestic origin, labeled "Maraschino" and "By volume 18 per cent alcohol," when it contained 26% alcohol, with other words in French, was held to be adulterated and misbranded. On January 23, 1917, the defendants pled guilty and were fined \$25.

5139. Adulteration and misbranding of oats.

Oats to which water had been added, sold as No. 2 white oats, was held to be adulterated and misbranded. On October 2, 1916, the defendants pled guilty and were fined \$300 and costs.

5140. Adulteration of pork and beans.

Filthy, decomposed and putrid pork and beans was held to be adulterated. On October 20, 1916, no claimant having appeared, it was ordered destroyed.

5141. Adulteration of pork and beans.

See Judgment 5140.

5142. Adulteration of beans.

See Judgment 5066. No claimant having appeared, product was ordered destroyed.

5143. Adulteration of beans.

See Judgment 5142.

5144. Adulteration of oats.

Oats to which barley and burnt oats had been added was held to be adulterated. On July 20, 1916, claimants having admitted the allegations, the product was ordered

delivered to them upon payment of costs and execution of a \$1,000 bond, conditioned that it should not be sold or labeled except as containing at least 13% barley and 22% bin-burnt oats.

5145. Adulteration of olives.

Partially filthy, decomposed and putrid olives were held to be adulterated. On October 20, 1916, no claimant having appeared, they were ordered destroyed.

5146. Adulteration of olives.

See Judgment 5145.

5147. Adulteration of pork and beans.

See Judgment 5121.

5148. Adulteration and misbranding of so-called purified wool fat.

Wool fat containing 50% petroleum products, although labeled as "Lanum" and "Purified Wool Fat," a U. S. P. name, and with no statement on the containers of its strength, purity or quality, was held to be adulterated and misbranded. On July 20, 1916, it was ordered released to claimants upon payment of costs and execution of a \$750 bond, conditioned that it should not be disposed of without a label approved by the Department of Agriculture.

5149. Misbranding of "Stuart's Calcium Wafer Compound."

An article containing strychnine was held to be misbranded because its labels represented that it contained no poisonous substance, and because of the fraudulent nature of its claims on the labels as effective as a remedy for various diseases. On July 6, 1916, no claimant having appeared, it was ordered destroyed.

5150. Adulteration and misbranding of pork and beans.

Partly decomposed pork and beans, 4.3% short weight from the statement on the labels, was held to be adulterated and misbranded. On October 20, 1916, no claimant having appeared, it was ordered destroyed.

Garden in Window.

The Thomas grocery, of Lima, Ohio, is planning to have a unique window display. Almost the entire front window of the establishment is covered with about 6 inches of rich, black dirt. This will be sectioned off, and seeds planted. Each section will contain a different vegetable. Lettuce, radish and other seeds will be planted. On either side of the window a running vine will be allowed to climb over the entire back of the large display space.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

of The American Food Journal, published monthly at Chicago, Ill., for April 1, 1918.

State of Illinois, County of Cook, ss.—Before me, a notary public in and for the state and county aforesaid personally appeared R. G. Gould, who, having been duly sworn according to law, deposes and says that he is the Editor and Publisher of The American Food Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Publisher—R. G. Gould, 15 S. Market St., Chicago, Ill.

Editor—R. G. Gould, 15 S. Market St., Chicago, Ill.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): A. V. Gould, 609 Cherry St., Winnetka, Ill.; R. G. Gould, 609 Cherry St., Winnetka, Ill.; H. F. White, The Temple, Chicago, Ill.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities.

R. G. GOULD, Publisher.

Sworn to and subscribed before me this 27th day of March, 1918.

H. C. DAWSON,

Notary Public.

(Seal.)

(My commission expires April 2, 1922.)

curities than as so stated by him.

THE AMERICAN FOOD JOURNAL



—with which was combined on May 15, 1918—

THE FOOD LAW BULLETIN

With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

ROBERT GORDON GOULD, *Editor*

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No. 6.

Butter Standards.

As announced elsewhere in this issue, the time has arrived when there is to be a Federal attempt to standardize and define butter. This is a matter of great importance to all of us. Edible fats constitute one of the most important and most expensive elements in our diet; also, the commercial butter industry is one of the largest and most important in the country. Present indications are to the effect that the Federal hearing announced for June 24th will be attended by the prominent commercial butter manufacturers and no doubt their opinions will have great weight with the Joint Committee on Definitions and Standards. This committee consists of nine representatives, three from the Department of Agriculture, three from the Association of American Dairy, Food and Drug Officials, and three from the Association of Official Agricultural Chemists.

In the opinion of this JOURNAL, it is eminently proper that a committee of this sort should seek all possible information from the trade, and this JOURNAL is also favorably disposed toward the standardization of butter, in connection with all other foodstuffs. Certain aspects of the situation, however, give rise to the fear that this hearing may not develop facts which are of vital interest to both the consumer and the producer of high grade butter. Unfortunately there is now being waged by various elements in the edible fats branch of the food industry a lively warfare having its origin in the long standing disinclination of all butter manufacturers to compete with oleomargarine, and of some butter manufacturers (the dairymen) to work in harmony with other butter manufacturers (the creamery men).

That the oleomargarine issue is still alive is amply proven by the brief filed with the Joint Committee and

written by Professor George L. McKay, secretary of the American Association of Creamery and Butter Manufacturers. Of this, two pages are taken up with a discussion of the profits of oleomargarine manufacturers, two pages to an explanation of the composition of oleomargarine and a protest against the use of butter as an ingredient thereof, and a page to an attack upon the product of a manufacturer of oleomargarine who is also a manufacturer of butter. The remainder is largely a glorification of butter and a deification of the dairy cow. The climax is a dissertation on vitamins in milk and its products.

Speaking for the commercial butter manufacturers, Secretary McKay would seem to assume that those known as "centralizers," those who neutralize excessively sour cream by the use of lime, those who in various, artful ways so manipulate their product as to incorporate the maximum amount of water possible should be allowed to use the name "butter" with but few if any restrictions. If their brief is indicative of the attitude of mind of the commercial butter manufacturers, the query naturally arises in one's mind as to whether that Association is anxious to see butter standardized "up" or "down." Would they improve the product for the benefit of the consumer and the industry in general or would they be willing to sacrifice all hopes of improvement in order to maintain the present status?

In anticipation of the coming hearing, the Joint Committee, on May 3d, sent to manufacturers of butter a questionnaire which called for specific and confidential replies to the following questions:

1. What should a standard for butter include—milk fat only; or milk fat and water only; or milk fat, water and salt only; or milk fat, water, salt and casein?

What should be the limit of each in butter?

2. What is creamery butter?

3. What is dairy butter?

It is of interest to note that no opinion is asked as to neutralization; no mention is made of whether the butter is manufactured from good or bad cream; there is no word of pasteurization; no word as to the use of "starters"; no reference to water so incorporated during the churning process that the finished product shall be as close as possible to the 16 per cent dead line; no suggestion made as to possible standards which could be used to distinguish between butters of different and varied quality and origin. Butter is one of the few important food products which the American public eats in a raw state. For that reason the matter of possible danger due to bacterial contamination is highly important. Is the omission from the committee's questionnaire of any reference to pasteurization significant? The committee is fully posted as to the rapidly growing practice of neutralizing excessively acid cream by the use of lime. What significance, if any, should be attached to the fact that the questionnaire says nothing as to the presence in butter of added alkali?

It should be understood that in the case of butter, unlike many other food products, the lawmakers have already spoken specifically as to certain points, notably the use of alkali, and the use of methods of manufacture which by manipulation cause the absorption of abnormal quantities of water. In regard to the second point the courts have maintained that the point at issue is the *abnormality* of the moisture content rather than its *extent*. Under a strict reading of the present law butter which would normally run 12 per cent moisture is adulterated if only sufficient water is added to bring it up to 13 per cent moisture just as truly as butter which would normally run 13 per cent is adulterated when sufficient water is added to bring it to the present-day popular figure of 15.975 per cent moisture. Centralizers, as a class, are prone to regard the present laws pretty much as dead letters. In recognizing, as this magazine does, the economic value of the modern centralizers, we must also admit that they have for many years been operating, and safely, on the assumption that they are immune to legal attack. The mere fact that butter is the only food product in which artificial coloration need not be disclosed on the label is indicative of their power in legislative circles. The Joint Committee, however, undoubtedly have no desire to ignore Federal statutes, nor could they if they so wished. So far as this JOURNAL knows, no attempt has been made to secure from either the solicitor of the Department of Agriculture or from the attorney general a legal opinion as to how far it is safe to go in attempting to define butter. There may be nothing of significance in this fact, but it arouses one's curiosity. The Federal laws of 1886 and 1902 are clear and specific. They define the product minutely and limit its manufacture closely. These laws are, of course, part of the records of the committee and the committee probably has in mind making provision for the proper labeling of products which are commercially known as butter, but which, without doubt, are illegal. It would seem that the manufacturers of sweet cream butter should at this crucial time see to it that the committee give them protection under the law, or at least that it does not, by ignoring the law's limitations destroy their industry, which stands at the apex of the entire butter making industry.

It is unfortunate that the brief filed by the American

Association of Creamery and Butter Manufacturers is not more constructive in its nature. That Association could, if it would, extend considerable assistance to both the producer and the consumer of the finer grades of butter, and instead of ignoring the law, could call for modifications which would work to the benefit of all parties concerned. Butter is of interest from various points of view. To some consumers it is an aesthetic product, its delicate flavor and appetizing qualities being most of interest; to others it is a source of fat in a diet; to others merely a lubricant for other foods. On the present market it is by no means safe to assume that the highest priced butter is the same as that which discriminating critics regard as the best butter. In fact, it is safe to say that the best butter manufactured today is not available to the general consumer, no matter how willing and able he may be to pay for it. Any laxity in regard to standards arising either from self-interest or from a desire to simplify what is admittedly a complex situation should be opposed strenuously by all who are interested in this important food product.

In this connection it may be of interest to compare the analytical constants of the several types of table fats now on the American market. The figures follow:

	¹ Nucoa Nut Margarine.	¹ Armour's Silver Churn Oleo- margarine.	² Typical Iowa butter (McKay & Larsen).	³ Suggested at recent hearings.
Moisture	6.53	4.90	12.73	16.00
Protein	0.69	0.56	1.30	1.00
Ash	1.58	1.44	1.97	3.00
Fat	91.20	93.10	84.00	80.00

In view of the foregoing, one is inclined to smile when reading Professor McKay's statement that "it would be unfair to butter to allow in oleomargarine more water or less fat than in butter."

In its report of official inspections, published January 1918, the Maine Agricultural Experiment Station, states that by virtue of extended investigations of Maine butter, carried on for the purpose of furnishing data for the forthcoming federal attempt at standardization, it has become convinced that "as a whole dairy butters are much more thoroughly worked than are creamery butters. Dairy butters mostly carry from 9 to 13 per cent of water and creamery butters carry about 5 per cent more water on the average. Some of the larger dairies are apparently quite skillful in the adulteration of butter by leaving a large amount of water in the finished product." The report then mentions one brand of butter which, thanks to a combination of water adulteration and short weight, ran 9.2 ounces of butter fat to the "pound."

¹Connecticut Agricultural Experiment Station, Bulletin 201, January, 1918.

²Food Products, Henry C. Sherman, The Macmillan Co., 1917.

³Facts About Butter, Amer. Assn. Creamery Butter Mfrs., Bulletin 12, February, 1918.

Bateson Now Food Commissioner of Buffalo.

Stephen W. Bateson, who has been acting chief of the Bureau of Food and Drugs of the Department of Health of the City of Buffalo since January 16th, 1915, was, on May 22nd, 1918, appointed permanently, by the City Council, on recommendation of Hon. George S. Buck, Mayor, to the position, the title of which has been changed to Superintendent, Bureau of Food Inspection.

Baking Powder Ruling in Canada.

A new ruling has been issued by the Canadian Government regarding the standard for baking powder and the manner of its labeling. In general terms it is prohibited to use acid materials that are injurious to health or that result in harmful compounds from interaction with bicarbonate of soda. The name of the acid material employed in the manufacture of baking powder must appear on the label of every brand, and where two or more names are available, the name most generally understood by the public shall be used. Compounds containing sulphate of aluminum in the form of a double salt with an alkali sulphate must be designated as alums, and should be distinguished as potassium alum, sodium alum, or ammonium alum, as the case may be.

The order also requires that baking powder be capable of yielding 10 per cent of its weight of carbon dioxide. Previous regulations adopted in 1912 prohibit the presence of arsenic (As_2O_3) in baking powder in excess of 2 parts per million.

Regulation of the Meat Packing Industry.

President Wilson has approved the recommendations of the committee which he appointed to report upon the policies to be pursued by the Government with regard to the meat and packing industry. The matter was raised by a letter from Mr. Hoover to the President on March 26. The committee making the report consisted of Secretary of Agriculture Houston, Secretary of Labor Wilson, Chairman of the Tariff Commission Dr. Taussig, Commissioner Fort of the Federal Trade Commission, and Food Administrator Hoover. On May 27, 1918, the committee made the following report:

Having examined the suggestions of the Sub-Committee, we make the following recommendations to the President with regard to meat policies:

REGULATION.

1. We recommend the continuation of regulation of the meat packing industry by the Food Administration and do not favor governmental operation of the industry unless it should be found impossible to enforce regulatory measures.

2. The auditing of the packers' bi-monthly profit returns to the Food Administration and the installation of uniform bases of accounts by the Federal Trade Commission should proceed as already settled between the Federal Trade Commission and the Food Administration. The present regulation by the Food Administration as to maximum profits should be continued to July 1st. In the meantime the Federal Trade Commission should report upon the reasonableness of these maximums. If found reasonable they should continue in effect until further notice. If found unreasonable such maximums should be made effective as facts warrant.

3. The packers should be required to report wholesale prices received for meat products and the transfer value of the principal by-products from their meat departments should be furnished by the packers to the Department of Agriculture for publication in their market reports as the Department may require.

4. The reports showing the wholesale prices of food dealers, now being made to the Food Administration, which includes the wholesale prices made by packers, branch houses, should be given local publicity to consumers.

5. The stockyards should be placed under license and regulation by the Department of Agriculture which should also establish a governmental system of animal grading under suitable regulations and methods of price reporting of actual transactions. Daily reports should be made on distribution and destinations of livestock, meats and other products from principal packing points.

GOVERNMENT AND ALLIED PURCHASES.

1. The Food Purchase Board established last November by the Food Administrator, and the Secretaries of the War and Navy, with the approval of the President, for the co-ordination of policies in purchases of official governmental

agencies of certain food commodities, should extend its activities to the co-ordination of the purchase of packing house products by all official agencies.

2. It must be recognized that the meat purchases thus co-ordinated through the Food Purchase Board during periods of sparse marketing or during periods of extreme production broadly influence market levels in meat and in animals and, at such times as they do influence prices, they should be made in accordance with economic conditions as they affect both producers and consumers and at prices on one hand sufficiently stimulative to ensure production at a point necessary to furnish supplies of meat during the war period, and, on the other hand, at such ranges as will prevent extortionate prices to the consumer. The packers' profits should be controlled so as to prevent excessive charges and so that the policy already declared by the President in cases where war buying dominates the market, that "We must make the prices to the public the same as the prices to the Government," may be effectuated.

GENERAL.

1. The Food Act gives no regulatory powers with regard to retailers. It is desirable, however, that an investigation should be made of the conditions of the retail trade with view to determination of some constructive effort that may be made in retail distribution and it is recommended that a committee should be created for thorough investigation of, and recommendation upon, the subject.

2. The private-owned cars of the packing industry should continue to be controlled by the Director General of Railroads.

Retail Prices to Be Limited.

Definite measures to limit retail prices are announced by the United States Food Administration. Through the medium of standardized "fair price lists," to be published in practically every county, hamlet, town and city in the country, Food Administration officials expect to protect the consumer from unreasonable price advances. By bringing prices to a uniform level the Food Administration will not only protect the average buyer, but will also protect the patriotic merchant who has followed its suggestions from the unscrupulous dealer who has attempted to take advantage of the situation.

PRICE INTERPRETING COMMITTEES.

In every community the Food Administration will establish price-interpreting committees composed of representatives of the wholesalers, retailers and consumers. This interpreting board will ascertain fair retail prices on the basic commodities that comprise a large part of the people's diet. The published lists will give the range of maximum selling prices—showing a reasonable low price, which will reflect charges that should rule in "cash and carry" stores, and a high price, representing a fair charge at "credit and delivery" shops.

Tradesmen on the boards will be appointed by the trades and will serve with a representative of the consuming interests, the local food administrator acting as chairman. Retail members of the committee will represent both the "cash and carry" and "credit and delivery" stores.

DETAILED REPORTS ON PRICES.

Each board will have detailed reports of actual wholesale prices and will ascertain fair margins of profit that should be made by the retailer. The final fair prices will be widely published. Newspapers in every city and county will be asked to co-operate, setting aside a particular position in a prominent place on the same day each week, running the lists with conspicuous headlines and interesting footnotes on the food problem and the use of substitutes for the foods most needed abroad.

Consumers will be asked to report to their food ad-

ministrator any stores charging more than the announced prices. Investigations of these reports will give the Food Administration a basis upon which to work in separating the patriotic dealer from the profiteer. An indirect control over the retail stores may be exercised by cutting off supplies at the source—instructing licensed wholesale dealers to sever business relations with the firms which exact more than a reasonable charge.

RETAIL PRICE REPORTERS.

Retail price reporters are being appointed in every county in the United States. They are expected to keep a close check upon charges made at the stores and to report to the local administrator all dealers not keeping within the limits prescribed in the "fair price lists."

Wherever investigation shows that any dealer has charged excessive prices, the administrator will grant a hearing. If he can not show a just cause for his failure to keep within the prices announced by the interpreting boards, he will be punished.

The Food Administration believes that with the operation of this standardized plan throughout the country it can assure the consumers that the price they pay represents no more than cost of production, plus reasonable costs and profits of necessary handlers. It has already, through its licensing system, put a close check upon the various classes of retailers and has eliminated all classes not performing a necessary function in moving in the shortest possible line and with least expense from the farm to the table.

Dairy, Food and Drug Officials Will Meet.

The Twenty-second Annual Convention of the Association of American Dairy, Food and Drug Officials which will be held in Chicago, August 27-30, promises to be one of the most important held by this organization. Many subjects of paramount importance in safeguarding the country's food supply will be discussed and considerable time will be devoted to the consideration of new problems arising from war-time conditions in relation to food subjects. The sessions will be held at the Congress Hotel.

Preliminary arrangements for the convention were taken up at a meeting of the Executive Committee in Chicago, March 22. It was agreed that no sessions will be held in the afternoon in order to afford opportunity for visiting food manufacturing, storage and dispensing establishments in Chicago and vicinity. Open sessions at which non-members and the public are invited will be held Tuesday and Thursday mornings and Wednesday and Thursday evenings. Executive sessions limited to membership will be held Wednesday and Friday mornings. The meeting Wednesday evening will be preceded by the Association dinner.

The program will include addresses and discussions relating to food nutrition and conservation, standards, law enforcement methods, army food supplies, the effect of the war on food industries, and many other food topics along scientific and technical lines.

Representatives from every state in the Union, as well as many prominent federal officials and experts on the subjects to be taken up, are expected to attend. The membership of the organization is composed of federal and state officers charged by law with the administration and enforcement of laws regulating the sale of dairy products, foods and drugs.

Texas Permits the Use of Saccharin.

Ruling No. 32.

TO THE MANUFACTURERS OF AND DEALERS IN CARBONATED BEVERAGES:

Due to abnormal conditions existing, Ruling No. 12, forbidding the use of saccharin in beverages, is hereby suspended until further advised.

You are respectfully notified that saccharin may be used in carbonated beverages, provided the product is labeled in such a way that will clearly indicate to the consumer that it has been *artificially sweetened with saccharin*.

Yours very respectfully,

R. H. HOFFMAN,

Food and Drug Commissioner.

Austin, Tex., May 25, 1918.

Red Cross Food Awaiting U. S. Prisoners in Germany.

The Red Cross authorizes the following:

Captured American soldiers arriving in German prison camps will find American Red Cross emergency food parcels awaiting them if arrangements already in operation are fully carried out. At the prison camp at Tüchel, in West Prussia, 57 miles northwest of the Austrian border, permission has been obtained to store emergency supplies, and 360 10-pound food parcels have been shipped there from the Red Cross headquarters for relief of prisoners at Berne, Switzerland, and for distribution to newly arrived prisoners. There are about 25 Americans in the Tüchel camp at present.

It is hoped that arrangements can be made in the near future whereby all or nearly all of the German prison camps will be stocked with similar emergency supplies in anticipation of the wants of those who are unfortunate enough to fall into the hands of the enemy. There are approximately 200 main prison camps in Germany, and some 10,000 prison groups, counting the small detachments of prisoners sent out to do farm labor. The American Red Cross plans to supply all these work camps, as well as others where American prisoners are held, with the regulation food parcels.

In the ordinary course of affairs it would be necessary for the bureau at Berne to be advised regarding the arrival of American prisoners in a German camp before sending food parcels. Ten days or more would elapse before the prisoners could have the benefit of the rations. At the camp at Tüchel, according to advices received by cable from Berne, Sergt. Halyburton and Corpl. Upton, American prisoners, have been delegated custodians of the emergency food supplies, and a storeroom has been assigned to them in which to keep the parcels that have been forwarded.

The above parcels constitute only a preliminary ration, which is intended to feed the prisoner from the time of his arrival at a camp to the time that he has been officially notified to the central committee in Berne. As soon as this notification is received by the committee, however, he is placed on the regular parcel list and three to four 10-pound parcels containing food, toilet articles, and clothing, are sent to him every two weeks. Each parcel contains also a return post card on which the prisoner notes the receipt of the parcel. These cards are immediately sent back to the committee at Berne, and in this way a complete check is kept of all parcels so sent.

Federal Trade Commission Analyzes Canning Industry

THE second phase of the investigation by the Federal Trade Commission into the food situation throughout the Nation has been completed. The report, covering costs and prices of all canned goods other than meats and fish, has been forwarded to the President.

The report represents the results of inquiries made throughout the principal producing areas of the country. Its findings are based on a study of the business of 4 corn canners, 20 tomato canners, 18 pea canners, 12 string-bean canners, 10 fruit canners, and in addition the brokerage houses, jobbers and wholesale grocers of New York and Chicago.

The rise in the prices of canned goods during the years 1916 and 1917 was found to be no greater than the rise that obtained generally in food price schedules.

Inequities in the Trade.

The principal inequities found to exist in the canning industry as at present conducted are:

Unlimited trading in futures; lack of credit facilities, making necessary the resort to futures by small manufacturers; the absence of a standardized delivery contract; unrestricted reselling; improper labeling of products, and lack of standardization of grades.

To correct these evils the commission makes recommendations, some of which would require the enactment of new legislation to make possible their enforcement. Summarized, the recommendations are:

That no sale of futures be allowed prior to February 1; that a limit (preferably not in excess of 50 per cent) be put upon the percentage of the total estimated pack permitted to be sold on future contracts between February 1 and a date to be agreed upon, such date being in the season when the maturity of the crop would be assured.

Establishment of credit facilities for canners, either through co-operative organizations or a governmental agency such as the farm loan bank.

Standardized Delivery Contracts.

Substitution of a standardized delivery contract for the "guaranteed delivery" and "pro rata delivery" contracts now general in the trade.

Limitation of sales between members of the same stage of production, with a view to moving the product as directly as possible to the consumer.

Require that the name of the canner and the State in which the product is packed appear on each label, and that a standard label be adopted for any single grade of goods.

Standardization of grades, so that the terms "fancy," "standard" and "extra standard" shall mean the same and classify a uniform product throughout the trade.

Economize in boxes by packing 36 instead of 24 cans to the crate and substituting, where possible, fiber or corrugated boxes for wood boxes.

Limitation on the maintenance of nominally separate sales agents.

Restriction of associational activity to a basis clearly in accord with law and public policy.

Collection and presentation by the proper branch of the Government of information concerning the factors controlling demand and supply in the canning industry.

Explanation of Recommendations.

In explanation of its recommendations the commission points out that canners, usually small and not strong financially, are forced to depend on advances which they obtain by selling futures, thereby encouraging undesirable and undue speculation.

The inauguration of a standardized contract is suggested to eliminate hardship and discrimination that arises under the forms at present in use. In years when the pack is short, guaranteed delivery contract holders benefit at the expense of those holding pro rata contracts, under which the seller delivers only that percentage of the quantity contracted for that represents the proportion of his actual pack to his total future sales.

Under the present system of labeling, packers, brokers and wholesalers are accustomed to put their own labels on goods, regardless of where or by whom the product was packed, leaving the purchaser entirely ignorant of the real source of the commodity. This custom, enabling wholesalers and large packers to combine the output of small canners, tends to curtail competition and, through the advertising of wholesalers' brands, has given the dealer a lever against the consumer.

The reformation in selling agencies is suggested to meet the situation which has arisen where the stockholders of the agency are interested in the canning company; in many instances the two organizations are identical. The commission received by the sales agencies has often yielded a large profit, and, where the agency is identical with the manufacturing company, such profits are not properly included in cost.

Restriction of associational activity is recommended to guard against recurrence of instances in which price advances were directly traceable to the activity of associations in the industry.

Other features of the report, a lengthy one, are here summarized.

RESULTS OF SMALL-SCALE PRODUCTION.

Canning is an industry of small establishments, the majority of them in places of small population. The industry is scattered, few of the important kinds of canned goods being packed exclusively in any one State. Expansion of the size of the business unit and extension of the kinds of products have not led to important economies in most cases. Large "general-line packers" have shown abnormally high costs, have charged high prices, and have not made unusually high profits.

Many factors have worked to check centralization of control in the industry. The usual small establishment, needing little capital, with the lack of localization. Few effective combinations have existed up to this time. The desire of producers to check competition and control prices, though, has led to associational activity, in some cases as effective as combinations for affecting the prices.

An important effect of the many small scattered establishments has been the resort to the canned goods broker. The ordinary small cannery can not have an expensive selling force. The distance between many

of the canneries and the jobbers in the large cities has necessitated a brokerage or selling agency near the jobber.

RISE IN CANNED GOODS PRICES.

Army and Navy purchases of canned goods on the basis of Federal Trade Commission cost findings, general rulings of the Food Administration, and the indictment of profiteering by both agencies, checked the advance of canned goods prices in 1917 somewhat, though no general price fixing occurred.

Abnormal demand, due to war conditions, and peculiar limitations on supply, are sufficient to place prices for certain periods beyond control of the forces which usually adjust prices. Canned goods are produced but once a year, preventing adjustment of prices for a considerable period, even if the immediate influx into the industry of capital and labor was possible.

COSTS OF CANNED VEGETABLES AND FRUITS.

Wide cost differences in various producing sections were revealed, making it difficult to compile average figures. For instance, in 1917, packing a case of 24 No. 2 cans of corn averaged \$1.63 in the Middle Western States and \$2.32 in Maine. Also packing No. 2 cans of tomatoes cost about \$1.40 a case in the Middle West, and averaged \$1.93 in Virginia and Maryland. Peas averaged \$1.61 in Maryland and \$1.88 in Wisconsin to pack a case of No. 2 cans. Variations between sections were great. Variations within sections were not nearly so large.

Average total costs per can, excluding selling expense, were:

No. 2 corn, 5.5 cents in 1916; 7.0 cents in 1917.

No. 2 tomatoes, 5.1 cents in 1916; 7.5 cents in 1917.

No. 3 tomatoes, 7.3 cents in 1916; 11.0 cents in 1917.

No. 2 peas, 5.9 cents in 1916; 7.6 cents in 1917.

No. 2 string beans, 5.7 cents in 1916; 6.9 cents in 1917.

About 70 per cent of the cost of a case of canned vegetables consists of the cost of the produce and the cans and cases. In 1916 this 70 per cent was about equally divided between raw material and the cans and cases. In 1917 the higher cost of cans made the containers actually cost more than the goods put in them.

Manufacturing operations cost 18 to 20 per cent of the total in 1916, but the next year only 12 to 15 per cent, leaving 10 to 15 per cent to be charged to general and overhead expenses.

In 1916, 24 No. 2 cans cost 30 to 40 cents, and in 1917 they cost 50 to 60 cents. Cases (boxes) increased from 7.5 cents in 1916 to 9.5 cents, approximately, in 1917. Using fiber and corrugated cases in place of wooden boxes proved economical for lighter shipments in domestic use.

PRICES AND CANNERS' PROFITS.

The most notable increases were in spot prices for tomatoes and future prices for corn. In 1917 the spot tomato prices were higher than futures. Corn futures were 50 per cent higher in 1917 than in 1916, amounting to about 60 cents per case of 24 No. 2 cans.

Canners averaged 9 per cent profit on investments in 1916 and 32 per cent in 1917. Although the War Industries Board regulated tin prices, the price of tin cans has been unregulated. The Food Administration has not been entirely successful in preventing large advances in raw vegetable prices in 1917. Rulings of the Food Administration somewhat checked finished product prices, but the rulings were too late to prevent unusually large margins over costs in 1917, particularly in tomato and corn canning.

TRADE CHANNELS.

The regular chain of distribution includes the broker and the wholesale grocer or jobber. The product is supposed to move from the canner, through the broker, to the wholesale grocer, thence to the retailer and consumer. In numerous cases, however, it was found that canners purchased from each other. In 1917, Libby, McNeill & Libby bought \$231,000 worth of products in California, selling it under its own labels and those of its subsidiary companies.

While brokers supposedly exist for transferring goods from the canner to the wholesale grocer, in many instances brokers bought and sold on their own account to make more profit. In many cases, too, wholesale grocers sold to each other and to brokers. In some cases wholesale grocers are known to have sold to canners. Since then, though, the Food Administration has tried to check reselling and to keep the product moving directly from the producer to the consumer.

DISADVANTAGES OF FUTURE SALES.

Where short deliveries followed bad crops or the dishonesty of packers the scramble of jobbers in the spot market at the end of the canning season led to unduly high prices. This condition was due largely to wholesale grocers who had sold futures and had to fill the orders. The high prices gave profit to dishonest packers, to those who had unusually large packs, and to wholesale grocers who had overbought. Future selling in time of rapidly rising prices has been found to benefit chiefly the unworthy and penalize the honest packer, small wholesale grocer and consumer.

PROFITS OF WHOLESALE GROCERS.

Wholesale grocers' largest profits were on fancy goods. They have succeeded in exaggerating distinction in quality through using private brands. Assuming that what were bought as fancy goods were sold as the same and what were bought as standard were sold as standard goods, they seem to have calculated much larger margins of profits on their fancy goods.

It cost large wholesale grocers from 11 to 13 cents to do business. In some cases more than 50 per cent gross profit was calculated on fancy goods bought and sold as futures. Margins of profit on standard goods were not unusually large.

In 1916 brokers made 3 to 4 cents a case on canned vegetables, and 4 to 5 cents in 1917. Profits on canned fruits were larger. Large wholesale grocers made about 5 per cent profit on sales, but their large business enabled them to make from 10 to 15 per cent on investments.

POSITION OF WHOLESALE GROCER THREATENED.

Large operating expenses of wholesale grocers have allowed chain stores, mail-order houses, and the large meat packers to develop as distributing agencies. Chain stores usually buy direct from canners. The large meat packers market canned goods through their branch houses. In both cases the wholesale grocer is eliminated from the distribution chain.

LARGE MEAT PACKERS' PART IN THE CANNING INDUSTRY.

Wholesale grocers consider the meat packers their strongest rivals. Swift & Co. control Libby, McNeill & Libby, the second largest packer of canned goods in the country, which made more than 70 per cent on its investment in 1917. Armour & Co. has become a jobber of canned goods, probably larger than any wholesale grocer. Wilson & Co. has been acquiring salmon interests on Puget Sound and canneries in Indiana.

Cereal Beverages

By GEORGE B. SIPPEL,

Assistant Superintendent of the Peter Schoenhofen Brewing Company.

THE American public during the last decade has been introduced to a great many "soft" drinks. Among these may be mentioned *cereal beverages*, which, from present indications, will eclipse all others in point of sales and in popularity. The last statement is not a wild assertion when we consider that the sale of these beverages this year will amount to many millions of bottles. Needless to say their rise in popularity has excited considerable comment as to their composition and method of manufacture. It is a difficult matter to define or describe a beverage of this type other than to say that it is a non-intoxicating, carbonated drink, sparkling, usually amber in color, and prepared from one or more cereals skillfully blended with hops. The flavor in some instances closely resembles beer, in others is quite different, dependent upon the character of the materials and the manufacturing method used. They are for the most part manufactured by brewers or men formerly engaged in the brewing industry, which is one reason for their uniform stability and quality.

Those familiar with the art of brewing and the equipment of a brewery know that these plants are conducted under approved sanitary conditions and under the supervision of skilled technical men. The following facts concerning the manufacture of cereal beverages should, therefore, be of some interest.

Cereal beverages can be divided arbitrarily into three groups, according to their method of manufacture and the character of the materials used.

Group 1.—This group comprises cereal beverages prepared from fermented beers by means of de-alcoholizing devices.

Group 2.—Cereal beverages prepared with the use of malt, but unfermented.

Group 3.—Cereal beverages prepared without the use of malt, and unfermented.

Group 1, De-alcoholized Beers.

Several of the best known cereal beverages are de-alcoholized beers. In this procedure advantage is taken of the extreme volatility of alcohol, and many ingenious processes have been devised to remove it from beer.

Beer contains a number of esters and oils highly volatile, which are important factors in giving a beer its character, aroma and flavor. These must be retained to secure a satisfactory product. Simple boiling, therefore, is out of the question in de-alcoholizing beers unless means are employed to counteract the loss of these volatile substances. This has been accomplished in two ways.

Where boiling is resorted to in open vessels the volatile substances escaping with the alcohol are replaced by subsequent treatment of the de-alcoholized beer with flavoring materials. One method is to add fresh hops to partly replace the aromatic oils lost during boiling. A very small percentage of "kraeusened" beer is added to replace the esters which are formed during the fermenting period of a beer. By the term "kraeusened" we mean beer in the highest stage of fermentation, therefore possessing these esters in abundance.

By far the greater number of de-alcoholizing processes on the market today employ a vacuum. The beer is boiled under a vacuum at a temperature of from 90°F. to 120°F., and in this way the loss of these aromatic substances is reduced to a minimum. De-alcoholized beers prepared in vacuo do not possess the "cooked" taste noticeable in some beverages de-alcoholized by boiling at atmospheric pressure. The esters and oils escaping with the alcohol do not all volatilize at the same temperature. Advantage has been taken of this fact in certain processes which employ reflux condensers and fractionating devices to collect the various oils and esters and when de-alcoholization is complete, these are returned to the beverage.

Materials Used.

The materials used in preparing these beverages are the usual materials used in brewing beer, namely barley malt, rice or corn grits and hops. The barley malt is ground, mixed with water and held at a temperature of 110°F. for one hour. At this temperature an enzyme, peptase, contained in the malt acts upon the insoluble proteins present and renders part of them soluble. In the meantime, rice or corn grits with a small percentage of malt is mixed with water and brought to a boil. The starch cells are broken open by this boiling and then are run into the malt mash above. The combined mashes then are held at a temperature of approximately 170°F., where conversion of the starch into sugar and dextrin takes place. This conversion is due to the activity of an enzyme, diastase, contained in the malt. By raising or lowering the temperature varying amounts of maltose sugar and dextrin are formed. The lower the temperature the greater the percentage of maltose; the higher the temperature the greater the percentage of dextrin.

The resulting extract is then separated from the grains and run into a copper kettle where it is boiled anywhere from one to two hours.¹ The boiling serves a threefold purpose.

1st. It sterilizes the liquid.

2nd. It extracts the bitter principles and the aromatic oil contained in the hops, the latter being added in the kettle at various stages of the boiling period.

3rd. It coagulates and precipitates certain albumins not desired in the finished product due to their influence on the brilliancy of the beverage.

After boiling, the extract is cooled to about 45°F., yeast is added and fermentation begins. The yeast used is a pure culture of the *saccharomyces cerevisiae* strain. After fermentation the beer is aged anywhere from four to eight weeks and then de-alcoholized.

The next stage is filtration and carbonating. The beverage is filtered either through pulp filters, or the ordinary type of filter press with the aid of diatomaceous earth. The beverage is carbonated with natural CO₂ gas collected during the fermentation period, and is then ready for the market.

¹It is well to note here that the grain residue is not allowed to go to waste. Dryers are usually adjacent to the plant, which transform it to a valuable cattle feed.



Small Unit Experimental Outfit for Testing Suggested Formulas.

Group 2—Cereal Beverages Using Malt, But Unfermented.

The majority of cereal beverages on the market today can be placed in groups 2 and 3. The general procedure and materials used in preparing beverages belonging in group 2, are identical to those employed in group 1. The mashing method in most cases is of such a character as to secure the greatest percentage of dextrin possible. The fermentation period is eliminated. A regular brew of beer is brewed in with a specific gravity of approximately 1.0530. The resulting extract contains about 7 to 9 percent of fermentable sugar which, during fermentation, is broken up into equal parts of alcohol and carbon dioxide. The specific gravity of the finished beer, ready for market, is 1.0167.

Cereal beverages rarely have an initial specific gravity higher than 1.028, and accordingly possess but half the quantity of fermentable sugar contained in beer worts. Normal fermentation takes place at about 45° to 50° F. By adding yeast to a cereal beverage and keeping it at freezing temperature, fermentation is checked and the alcohol content is practically nil, hardly any of the sugar being attacked. The specific gravity of the finished cereal beverage approximates 1.0259.

The elimination of the fermentation period in the manufacture of cereal beverages is responsible for the high percentage of fermentable sugars they contain when compared to a beer. In a normal fermentation of a beer, all but about 10 per cent of the fermentable

sugar is attacked by the yeast and broken up into CO₂ and alcohol. In a cereal beverage fully 80 per cent of the fermentable sugar remains in the finished product. This is possibly the principal reason why cereal beverages belonging to groups 2 or 3 are slightly sweeter than those of group 1.

Filtration and carbonating present difficult problems. The filtering problem was solved by the use of the filter press. Carbonating is not a problem to the brewer still permitted to brew beer inasmuch as he is able to collect the CO₂ gas resulting from the fermentation of his regular beer and to use this to carbonate his cereal beverage. The manufacturer of cereal beverages independent of a brewery, however, must manufacture his own CO₂ gas, or purchase it. The majority are manufacturing their gas, using either coke as the base material or marble dust and acid.

Group 3—Cereal Beverages Prepared Without Malt.

Beverages in this group are of particular interest in view of the fact that they are prepared without the use of malt as a saccharifying agent. Three of the best known methods may be classified as:

1. Using wheat bran as the base material.
2. Using corn, barley meal or rice, in conjunction with a high power diastatic preparation.
3. Using glucose as the base material.

Method No. 1—Wheat bran, rich in phosphates and aluminous matter, is the base material of the "Wahl" process. An extract is obtained from wheat bran by the action of special lactic ferments. Otherwise the



A Corner in the Chemist's Laboratory in a Modern Cereal Beverage Plant.

method of treatment is similar to that employed in groups 1 and 2.

Method No. 2—In this method corn grits, barley meal, rice, or admixtures of all three or with corn syrup are boiled and the starch is then converted by means of a diastatic solution obtained by the action of certain mineral salts on any material rich in diastase.

Method No. 3—This method is used quite extensively. The glucose is simply dissolved in boiling water in the kettle, a foam producing material is added, the resulting solution is boiled with hops in the usual manner, cooled, treated with yeast, filtered and carbonated. Certain prepared syrups are on the market which have some merit. These syrups consist of a special glucose rich in dextrin, to which is added a foam and "body" producer. The latter is of great importance in preparing a beverage from glucose.

The foam stability of a beverage is due principally to the presence of soluble proteins, chiefly albumoses and peptones. These are absent in glucose and must be secured from some other source. Yeast has been found to be highly satisfactory for this purpose. Various methods are employed to render the protein soluble. Some manufacturers simply add the yeast direct to the syrup in the kettle and boil for several hours, during which time the yeast cell is broken up. Yeast on a dry basis contains about 50 per cent protein. Manufacturers of prepared syrups allow peptonizing enzymes to act upon the yeast, or "autolyze" it, at certain favorable temperatures for a given length of time, and then add the resulting soluble extract to glucose.

A comparative analysis of beverages prepared ac-

cording to some of the various methods mentioned follows:

Analyses.	Beer.	Dealcobolized beer.	Cereal beverages, using malt, unfermented.	Cereal beverages, using bran, unfermented.	Cereal beverages, using glucose, unfermented.
Specific gravity	1.0167	1.0204	1.0259	1.0266	1.0180
Alcohol by weight, %	3.59	trace	0.20	trace	0.18
Alcohol by volume, %	4.60	trace	0.25	trace	0.23
Reducing sugar, %	1.75	1.49	4.61	4.38	3.53
Non-reducing sugar, %	2.40	3.20	1.8	2.03	1.61
Volatile acid, %	0.0036	0.0036	0.0012	0.0024	0.0021
Fixed acid, %	0.081	0.036	0.018	0.063	0.025
Protein, %	0.45	0.34	0.29	0.22	0.12

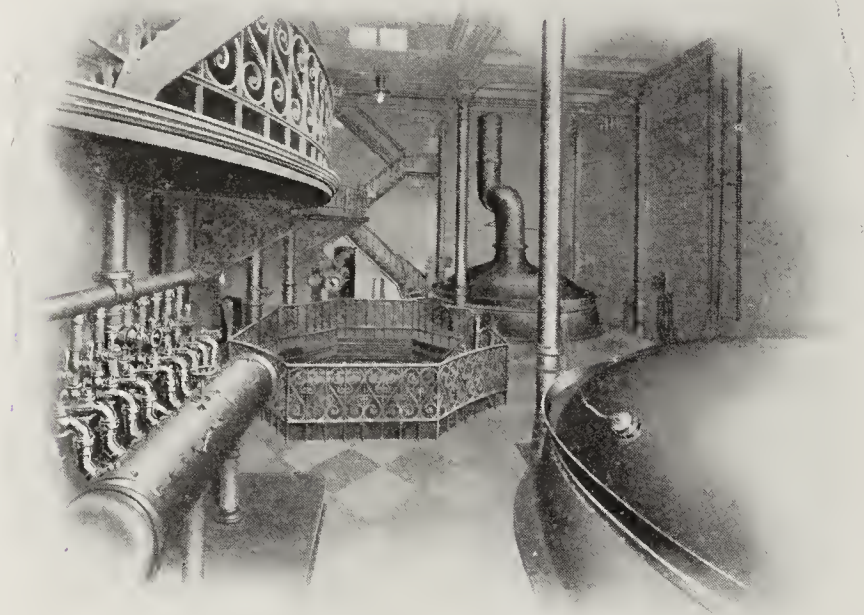
Sanitary Plant Control.

Sanitary control in the preparation and packaging of beverages is of primary importance. In a cereal beverage plant effective means are employed to promote cleanliness and safeguard the product. All utensils, pipe-lines, casks, filters and other equipment are cleaned and sterilized regularly. Floors, walls, ceilings are kept scrupulously clean. Cold storage is used effectively in preventing the growth of putrefying or acid forming bacteria. Wherever possible, laboratory control is established.

The Cleaning of Equipment.

All tanks subjected to heat are thoroughly cleaned immediately after they have been used. Stiff brushes of good quality and pure water are provided for this purpose. Scouring compounds are used whenever necessary and periodically hot caustic soda solutions are pumped through all pipe lines and tanks. The

cooling equipment is cleaned immediately after using with stiff brushes and plenty of water. The cooling coils then receive a washing with a germicidal solution, and are again rinsed with water. Once a week hot caustic soda is used in cleaning the coils.



Brew Kettles in a Sanitary Plant.

All casks in the fermenting or storage rooms are varnished (if of wood) or glass enameled (if of steel). The hard and smooth surface of the varnish prevents the soaking of organic matter into the wood and permits of easy cleaning. These casks are all cleaned every time they are put in use. Lime is extensively used for this purpose and serves a twofold purpose. It effectively softens all dirt and at the same time furnishes the foreman visible proof as to whether the man cleaning a cask actually reaches every part of it. Glass lined steel tanks are extensively used in modern plants and are very easy to clean. As a precautionary measure, all casks are given a lime-sulphur wash. Pipes and pumps in the storage rooms are all thoroughly washed and sterilized with steam regularly. Germicidal solutions are extensively used in cleaning pipe lines.

In the bottling department the bottles are run through a soaking machine containing four compartments. The first three compartments contain hot caustic soda solutions testing 3.5, 3 and 1.5 per cent, respectively. The fourth compartment contains pure water. After leaving the soakers, the bottles are thoroughly brushed and rinsed on a special washing machine. Every bottle receives three brushings and four rinsings under hydraulic pressure.

The bottles are then inspected and run from the rinsing machine to the filler. After filling they are crowned and as a final effective measure are thoroughly pasteurized at a temperature of 165° F. for 20 minutes. The pasteurizer contains three compartments. In the first compartment the bottles are gradually heated up to pasteurizing temperature to prevent excessive breakage. The second compartment is the pasteurizing compartment, while the third compartment is used to cool the bottles. It is, therefore, not surprising that cereal beverage will keep indefinitely.

Cold Storage.

Cold storage is an important factor in the preparation of a beverage of this kind. Regardless of the extreme care taken in sterilizing utensils and cleaning

casks, the danger of air contamination is always present. Cereal beverages, rich in fermentive material of all kinds, are readily attacked by lactic, butyric, acetic and other ferments. Cold storage effectively prevents the growth of acetic or butyric ferments and checks the action of lactic ferment. In a previous paragraph attention was called to the retarding influence of extreme cold on alcoholic fermentation.

Laboratory Control.

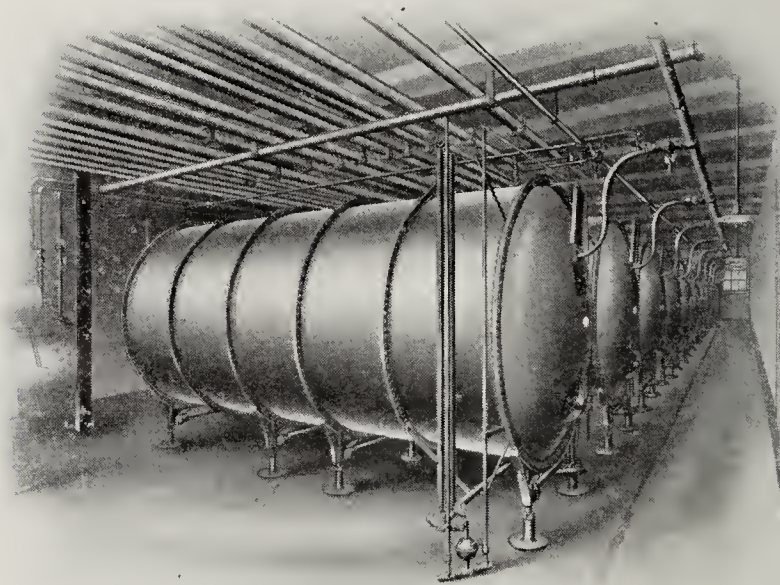
Laboratory control in a food manufacturing plant is a vital necessity. Practically all the well-known cereal beverage manufacturers maintain laboratories or have arrangements with scientific stations to do this work for them.

All materials are purchased on a guarantee basis and are analyzed in the laboratory. The water supply is kept under constant supervision. Plate cultures on nutrient agar and wort agar give an excellent indication of the condition of the water. Pure cultures of yeast are prepared for use in the plant. Daily examinations of the yeast are necessary to effectively guard against outside contamination. Samples of beverage from the cooler are plated on wort agar to serve as an indication of the cleanliness of the cooler. Samples of air are taken throughout the plant and yeast, bacteria, and mold counts made. Wild yeast indications are always looked for.

Alcohol determinations are necessary precautions to be taken. Samples of beverage from the pasteurizer are kept under supervision. All pasteurizers and tanks are equipped with recording thermometers. These must be standardized in the laboratory. Caustic solutions from the soaker are analyzed regularly to maintain them at constant strength.

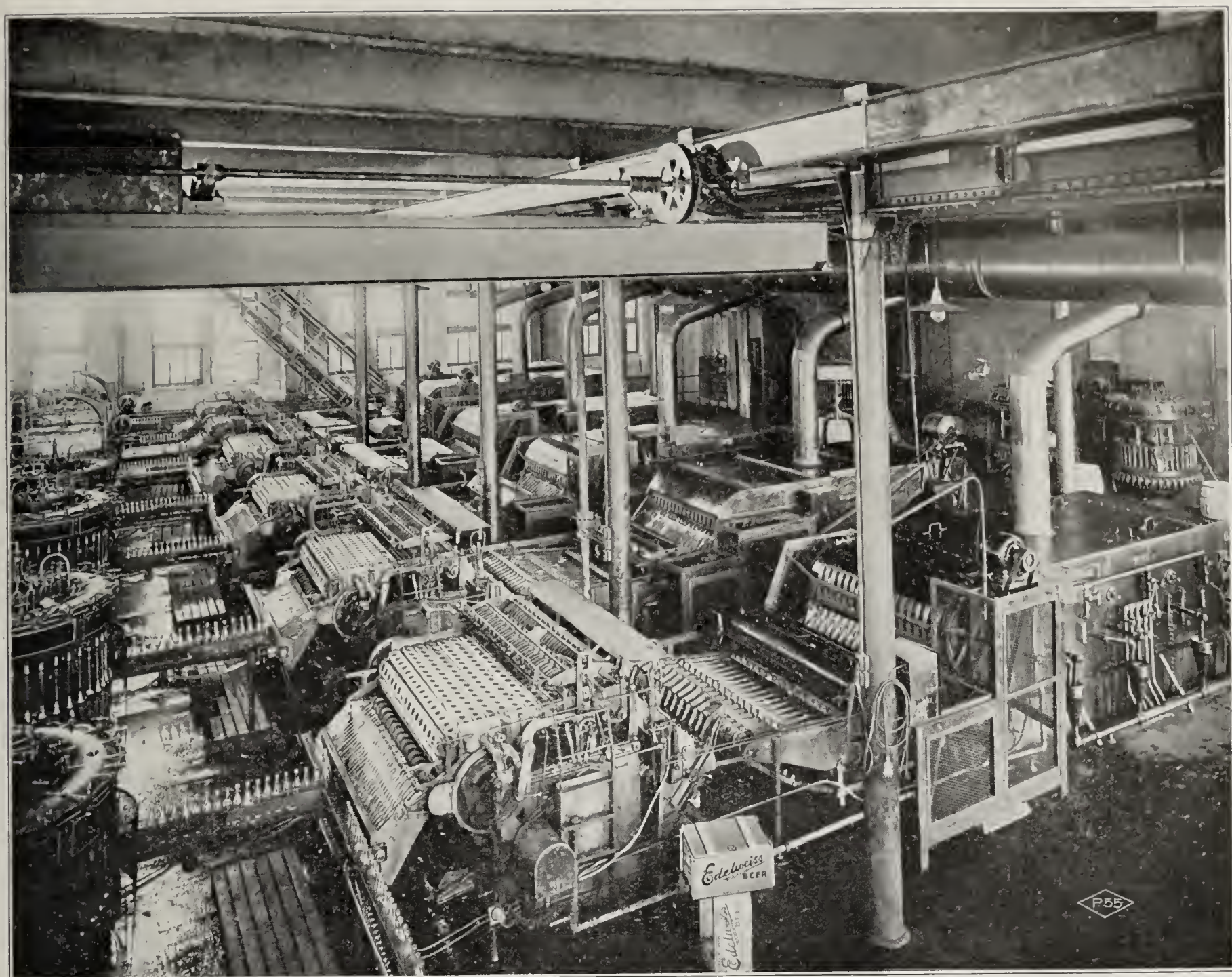
Uniform Legal Control Desirable.

In conclusion, the writer trusts this article has been of some value to all interested in the manufacture of beverages. Furthermore, attention should be drawn to the wide diversity in the various state laws governing the composition, manufacture and sale of these beverages. Some states prohibit the use of malt in their



Glass-Lined Steel Tanks for Ageing Beverages.

manufacture, others prohibit any alcohol to be contained in them, one state has arbitrarily set 0.2 per cent by volume as the maximum. Another prohibits their sale entirely. The Association of Official Agricultural Chemists has tentatively adopted a Uniform Feeding



Bottle Washers in the Bottling Room of a Large Plant.

Law. Is it not possible to do the same with cereal beverages and adopt a Uniform Cereal Beverage Law? The Revenue Bureau of the U. S. Department of the Treasury has placed the maximum alcohol content of these beverages at one-half of 1 per cent by volume.

Canada permits $1\frac{1}{2}$ per cent by volume. Cereal beverages are palatable and thirst quenching, are prepared from pure and wholesome materials in sanitary plants, and are presented to the public in clean, sterilized packages. Surely they merit favorable recognition.

Pennsylvania Standards for Eggs and Grains.

Standards for grades of eggs, corn, wheat, oats and straw have been adopted by the Bureau of Markets of the Pennsylvania Department of Agriculture.

Pennsylvania fancy or No. 1 grade eggs must be non-fertile and not over four days old. They must be clean, unstained, uniform in size, shape and color, firm and strong-shelled, must be approximately $2\frac{1}{4}$ inches long and about $1\frac{7}{10}$ inches at the widest diameter and weigh from 24 to 28 ounces to the dozen. The eggs of this grade must be strictly fresh. The yolk of a fresh egg should be round and stand high when broken. The albumen next to the yolk should be jelly-like in appearance, but the outside layer of the albumen should be watery. Old eggs may be distinguished by the flat appearance of the yolk, and by the uniform watery appearance of the albumen.

Pennsylvania choice grade eggs must meet the requirements in freshness and be non-fertile, but there are no requirements regarding size, weight, color or uniformity.

Corn is divided into three grades for yellow, three for white, and four for mixed. Red winter wheat has five gradings, and hard winter wheat the same number. Spring wheat has four grades and white spring wheat the same number, while there are several other classifications. Oats and hay have also been divided into grades according to quality.

California Dried Peaches.

California dried peaches have long suffered a market handicap because of difficulties in peeling the fruit before drying, peeled dried peaches being more toothsome. Now the California Peach Growers' Association has patented a process by which the skin is removed from the peach after drying, and this is expected to greatly improve the quality of the product and widen its market.

Why Save Sugar?

By CHARLES RYAN,
of the U. S. Food Administration.

PROBABLY more than any other one commodity, sugar has clearly reflected the tremendous strain this war has placed upon the world's shipping tonnage. A chart showing the gradual reduction of sugar rations in Allied countries would be a clearly fair index of submarine sinkings and imperative demands for cargo space to meet increasing war needs.

Early in the war Europe maintained almost her normal consumption of sugar. As the available tonnage began to grow less and less, other luxuries were cut off. Sugar, although a luxury to the extent that it was consumed above actual needs of the body, was still kept moving across the ocean. In the second year of war shipments were gradually reduced to meet the inroads of the U-boats. As the total tonnage declined, greater and greater became the proportion of cargo space that had to be reserved for essential war shipments. Each merchant vessel sent to the bottom increased the necessity for importing everything from the nearest possible port.

Sugar began to move less rapidly. Vessels that had been plying to distant sugar ports were put in the American trade. Sugar was still kept moving from the United States as steadily as possible, but reduction in Allied imports was unavoidable.

Now, it has come to the point where England, once accustomed to the heaviest sugar diet in the world, has a per capita consumption for household use of two pounds a month and a manufacturing consumption of one pound. Total consumption before the war was in the neighborhood of nine pounds per month per person—a little more than a pound more than that in the United States. France now has two pounds per month and Italy two pounds.

Sugar, except for household and preserving use, is not a necessity. As it has been consumed in the United States it is largely a luxury and we could easily give up a few luxuries without suffering or hardship. There can be neither excuse nor reason for continued heavy consumption in this country when we know beyond a doubt that every ton of shipping used to bring us sugar from other countries means literally less cargo space in which to ship food, men and munitions to Europe.

Our present world food problem is essentially a problem of ships. If we had sufficient ships there would be no need for great conservation in Europe or in America. The normal diet of both peoples could be maintained.

With sufficient ships barely to maintain a living ration in the Allied countries, it is vitally necessary that every vessel work at full capacity. So great has become the scarcity that it is no longer sufficient merely to have the ships ply to the nearest ports. Their cargos must be made up of those foods which are absolute necessities. Luxuries have become a thing of the past.

Every ship used to bring from Cuba sugar that is to go on American tables could perform a greater war service if used to carry food, men or munitions to the Allies or to displace other ships which could do so.

There is still as great need for sugar in Europe as there was a year ago. And yet the need for other foods

is so much greater that the United States exported only 23 tons of sugar to the Allies in the week that ended May 18. In the corresponding week of 1917, we shipped 3,501 tons. This is because of ship shortage—because of ship shortage, we have no surplus stores here, and because of ship shortage Europe could have imported sugar only if she had received less of other essentials and only if we had sent fewer men on ships that could have transported food.

It is difficult to reduce the ration of a free people—unbound by autocratic food control, unhampered by compulsory rations and food cards. If it can be done as it has been done in the case of wheat it is much better. The United States Food Administration has steadfastly held to the belief that by voluntary service and sacrifice the American people can face and solve the food problem. It has consistently worked on the theory that if the people are made to understand what is needed, they can be depended upon to do their share. The limit of voluntary reduction, however, may be passed and stringent measures may be necessary.

The time has come when they should show that their desire for world freedom, their will to win this war, their determination to share privations with the people overseas—that these things are greater than the mere desire for a luxury that can be foregone without harm or more than a passing regret.

This is not the view of an alarmist. It is not a prophecy that a sugar famine is avoidable or is in store for us.

There is no reason to believe that every need of this country, so far as food is concerned, will not be met. All needs, if not all desires, will be fully satisfied. Positive food suffering in this country would perhaps bring as disastrous results as greatly increased suffering in the Allied countries.

But we are faced with the solemn obligation—each one of us 110,000,000 Americans—of trying to lighten the burden on the other side of the Atlantic. It is hard, almost impossible for us to gain even the slightest idea of what suffering, hardship, sorrow and privation our brothers in arms have borne, stoically watching the best of their young manhood mowed down in defense of humanity.

We know that those people must have substantial food. We know that each ship which goes down brings them nearer to the danger line. We know that every vessel afloat is sorely needed if they are to remain in this war.

We know that each ship used to carry non-essentials is keeping strength-giving food from them. And we know that except for about an ounce and a half a day, sugar is absolutely a luxury in our diet—and we know that as a nation we have been eating thrice that amount. And we know, too, that we have many other sweets to take its place, if we grant that our desire for cane sugar is merely a desire for something sweet—honey, maple sugar, syrups, corn sugar.

Knowing all of these things, what are we to do? Shall we continue to maintain a consumption that keeps millions of pounds of vessel space plying the seas that we may live in luxury? Or shall we divert

those ships to channels that would keep the wolf from Europe's door?

Less than two months ago it looked as if Belgium's food supply would be cut off—there were not enough ships to maintain the strength of the Allies and at the same time to prevent heroic little Belgium from starving to death.

President Wilson averted that disaster. Fifty thousand tons of ships were diverted from our Cuban sugar trade in order to release ships from other sources to carry food to Belgium. If we in our greed make it necessary to reinstate those ships and again draw sugar from Cuba or Porto Rico, Hawaii or the Philippines, we will have the blood of many Belgians upon our hands.

Either we must cut down luxuries and give up non-essentials from other lands, or—Belgium and the Allies must be deprived of necessities.

It is hard to realize that individual sacrifice will have a material effect in cutting down national consumption. Each of us is prone to the belief that the little bit just one person can do will be a very small weight in the balance.

But we felt the same way about bread. Early in the year, we could see little reason why we should try to save, because we were convinced that millions of other people would continue to live in the same old way.

And yet we saved about 150,000,000 bushels of wheat—enough to keep the Allies in the war. Out of our last harvest we actually saved 150,000,000 bushels. Had each of us eaten as we did a year before, the harvest would have netted a surplus of only about 20,000,000 bushels. And yet out of that same harvest, when the final toll is taken, we will have exported about 170,000,000 bushels.

We did that because by the hundreds of thousands Americans gave up wheat entirely. By the millions they cut their consumption in two. By the tens of millions they saved at every meal.

That was individual service. It shows what results from individual sacrifice.

The story can be duplicated in sugar.

But be sure that you save wisely.

Do not save sugar by failing to preserve fruits or make jellies and jams. That is a wise use of sugar. The Food Administration encourages it. Sugar used to preserve perishable foods serves a double purpose. It stores up sugar for use through the year and it conserves products which would be wasted unless they could be kept for future use.

In order to make it possible to preserve, the Food Administration has allowed the grocer to increase his holdings of sugar. It has instructed him to increase the amounts sold to his customers—merely asking that they sign a pledge that the sugar is to be used in the preservation of perishable foods and that all amounts not so used will be returned.

At the same time the Food Administration has placed no restrictions upon the purchase of sugar by manufacturers who preserve fruits or vegetables. It has urged him to lay in supplies sufficient to take care of his entire 1918 pack.

In order to do these things, it has been necessary, however, to save in other directions.

"Why should I give up sugar, even a little bit of it, when confectioners and other people who use it to make useless luxuries are allowed to have plenty?"

That question is asked daily by thousands of people.

There are several answers. The first is, "Those people do not get plenty."

The Food Administration has rigorously curtailed the use of sugar by manufacturers of less essential food products, and has absolutely eliminated its use by manufacturers not making food products, unless they use it in the manufacture of explosives or glycerine.

The less essentials were cut to 80 per cent of their needs in 1917. Those who started business or increased their capacity after November 1 and before April 1, knowing that the country faced a shortage of sugar, can have only half of the amounts actually needed for the conduct of their business. Those who started or expanded after April 1 were cut off altogether and have been made to pay the penalty for attempting to profit at the expense of others who were trying to meet the Food Administration's request for voluntary reduction. They will be still further cut.

Control of distribution is entirely in the hands of the Food Administration and it is practically impossible for unpatriotic manufacturers to evade the spirit of the regulations. Before they can purchase sugar in any amounts they must give to the seller a certificate issued by the Federal Food Administrator for their state. A careful survey has been made of the business done by the various consumers, and the certificates are carefully regulated in accordance with the Administrator's records. These certificates must be cancelled and returned to the Administrator, who can check the records of each concern and detect any trading in or counterfeiting of the permits. By a careful check upon the holdings of refiners and distributors, the Food Administration makes it extremely difficult for violators to practice any illicit trading.

These eighty per cent limitations are effective only until July 1, when the Food Administration may deem it advisable to adopt still more stringent conservation measures. In any event they show that steps have been taken to assure the consumer of adequate sugar to warrant home canning and to protect his supply for household use.

But this does not relieve the consumer of his responsibility to the people in Europe. It cannot be taken as a justification for continued waste and prodigal use of a luxury. It does not alter the fact that our western beet fields supply only a small part of the sugar that goes into American consumption.

The fact remains that a vast majority of the sugar consumed in this country comes from other lands and must be brought here in ships. And the fact remains that those ships are needed to carry food, men and munitions to the Allies. We still must face the fact that only by adding to Europe's burden can we retain those ships in our sugar trade. We can never alter the fact that every inch of cargo space used to bring us luxuries means one inch less that could help to maintain the strength of the Allies' battle lines and the morale of the peoples behind those lines.

Last year we were faced with a sugar shortage.

Last year we knew that Europe was in danger of starvation.

Last year we knew that we were being asked to save sugar.

Last year we knew that the people of Europe needed it badly.

And yet last year our sugar consumption increased.

This year we know all of these things. And we know something else—we know as we didn't know then that our country is at war. We know as we couldn't then how absolutely is the Allied cause dependent upon the support it receives from America. As we never knew before, we know how integral a part of war is the vast problem of world shipping. And we know, too, as we didn't realize a year ago, that the solution to that shipping problem, if it is to be found, lies in America—in American willingness to sacrifice for a cause that is just, to suffer deprivation for people who have bled and toiled for us, to take from war-weary shoulders burdens that could much better be borne by the fresh and the strong.

Our every action until Prussia is defeated must be judged by one standard—its effect upon the war. That must be first and foremost, every day, every hour, every minute.

"Will it help us win the war?"

"Will it delay victory or increase the danger of defeat?"

Those are the two most important questions that can possibly enter our minds so long as the safety of the

world is so largely in our hands.

Relatively, the kaiser today seems as strong as, if not stronger than on that fateful day when he massed his troops at the Belgian border. An immediate peace, with his native soil untouched and with thousands of acres of conquered territory under his mailed fist, would be a blow from which the world might never recover.

With the rest of the world so completely dependent upon America for the assistance which will make peace without victory unthinkable, not one of us can afford to withhold the slightest service. With humanity trusting so absolutely upon a narrow lane of ships, our course is clearly mapped out before us.

If we forget for a while that single standard by which it is so imperative that we rule our lives, our very forgetfulness may be our answer.

"Will it help us win the war?"

You, by your actions, must reply—for you are one of the integral units in our united nation, and only if we stand united in our willingness to serve may we hope for the "western front" to hold firm until the German Emperor can be dealt his death-blow.

Penalties Imposed by U. S. Food Administration.

More than 800 penalties for violation of rules and regulations governing licensed dealers in foodstuffs have been imposed during the past 10 months by the Food Administration. About 150 companies and individuals have been ordered to quit business in licensed commodities for a limited or unlimited period, and over 500 have voluntarily made a money payment, usually to the Red Cross, or have temporarily abstained from doing business rather than risk calling down more drastic penalties upon their heads.

A vast number of other cases have been disposed of by Federal Food Administrators in the various states and territories under the authority of but without specific appeal to headquarters at Washington. In a large number of other cases the desired compliance has been secured without penalty. More than 2,500 cases arising out of the shipment of foods and feeds, many of them perishable, have been disposed of.

Penalties inflicted, from the passage of the Food Control Act, August 10, 1917, to June 1, 1918, may be summarized as follows:

Unlimited revocations of license, requiring the licensee to abstain from business in all or in specified licensed commodities until further notice, 65, of which 56 are outstanding. Limited revocations, requiring licensee to abstain from business in all or in specified licensed commodities for a definite period, 62, of which 19 are outstanding. Unlimited unfair orders, directing licensees until further notice not to sell any or specified licensed commodities to unlicensed dealers who have engaged in unfair or wasteful practices, 8, of which 3 are outstanding. Limited unfair orders of the same effect as those last mentioned excepting that the prohibition is for a limited period only, 12, of which 9 are outstanding. Refunds and contributions, consisting of money payments voluntarily made in place of more drastic formal penalties of the above nature, 131. Temporary suspensions and minor penalties, voluntarily accepted in place of more drastic formal penalties of the above nature, about 375. Requisitions and forced sales, consisting of food commodities disposed of without resort to drastic formal penalties for hoarding, 24. Stop orders against the

issuance of licenses, either pending investigation of alleged violations or undue delay in applying for a license, or as a minor and temporary penalty for offenses committed before a license is issued, of which 103 are outstanding.

Standard Containers for Fruits and Vegetables.

All interstate shipments of fruits and vegetables in containers must be in packages that conform to the provisions of the United States Standard Container Act, says an announcement from the Bureau of Markets, U. S. Department of Agriculture, which is charged with the enforcement of the Standard Container Act. The baskets, crates, hampers, and boxes must be in size containing half-pints, pints, quarts or multiples of quarts. Slight variations either over or under size may be allowed provided the average for any shipments conforms to the standards. Climax baskets for grapes can be made only in 2-, 4-, and 12-quart sizes and of the dimensions specified in the act.

The variations from standard sizes are made, it is stated, because of the nature of the containers, they being usually rough finished. No allowance for products heaped over the edge of the container is made, and the capacity of a container is determined by stricken measure tests.

Although the law applies only to interstate shipments it is probable, according to the Bureau, that intrastate shipments will be generally made in United States standard containers, because many manufacturers have arranged to make no containers except those that comply with the federal size requirements. Even shippers whose products are usually consumed in their own state are said to favor packages complying with the United States Standard Container Act, because they have no assurance that their produce will not be sent across state boundaries before it is consumed.

The enforcement of the Standard Container Act will tend to eliminate deceptive practices in marketing fruits and vegetables, say the specialists, and will give a "square deal" to both the purchasing public and the trade. Over 40 food products inspectors already stationed in the large receiving markets are available for enforcing the act.

Penalties Under Food Control Act

For violations of the U. S. Food Administration's regulations a number of licensees were penalized during the past few weeks. Among them were the following:

The Puritan Flour Company, of 10 Milk street, Boston, had its license revoked from May 28 until further notice for failing to accept and unload a car of corn meal.

The same penalty was imposed on the Wortham Cotton Oil Company, of Wortham, Texas, for failure to deliver 70 tons of cottonseed cake or to make an adjustment. The revocation became effective on May 24.

For failing to use the required amount of substitute in making bread, Gram Brothers, bakers, of Minot, N. D., have been required to donate \$200 to the Red Cross. The firm was permitted to operate under the supervision of a guardian appointed by the Federal Food Administrator of that state.

Fifteen restaurant men of Denver, Colo., were given hearings for disobeying rules in regard to amount of bread served customers. Five of them made donations to the Red Cross of from \$5.00 to \$25.00 in lieu of other penalties and the others were released with a reprimand.

At Salida, Colo., Frank Gill, a grocer, paid \$500 to the Red Cross for infraction of Food Administration regulations rather than have his place closed for 30 days.

A baker and grocer named Bingham at Rifle, Colo., lost his license and was closed for selling sugar and flour without regard to regulations. He declined to make a \$100 donation to the Red Cross in retribution for his overcharges.

Two bakers and one grocer of Porto Rico have been penalized. The bakers, Estanislao Santana and Manuel Borboha, were closed for operating without a license and their stocks of flour turned over to a local charity. The grocer, Alberto Vodal, paid \$300 to local charities for overcharges on flour, rice and lard.

The Hudson Food Products Company, of Cohoes, N. Y., was closed for one day (May 15) for violating flour and sugar rules.

Harry Albin, of 83 Hester street, New York City, paid \$200 to the Red Cross for making overcharges on sugar during November, December and January.

The license of A. A. Haines, a baker of Rayne, La., was suspended for 10 days, effective May 25, for not using sufficient substitutes in bread and for failure to observe weight limitations.

C. & R. De Lello, wholesalers and jobbers of fresh fruits and vegetables, 19-21 School street, Yonkers, N. Y., license revoked, effective May 31, until further notice, for unjustifiably rejecting a car of potatoes and failing to carry out agreement with Food Administration.

Comanche Cotton Oil Company, Comanche, Tex., license revoked, effective June 1, for non-fulfillment of speculative contracts made by manager of the company.

J. G. Cheetam, miller of Minard, Mich., mill closed for operating without a license. The issuance of his license will depend upon his observance of the closing order.

Ong K. Ten, of Mesa, Ariz., permitted to contribute \$50 to the Red Cross in lieu of a suspension of his license, for selling flour without substitutes.

The following merchants of Jefferson County, Ga., have been allowed to contribute \$25 each to the Red Cross for making excess sales of sugar: Slade, Boozer Co., C. S. Bryant Co., and W. E. Josey & Sons, of Bartow; D. M. Mills, of Wadley; M. A. Hadden, G. R. Hadden, C. W. Williams, A. D. Lafavor, George F. Dixon and R. W. Dixon, of Avera.

The Forest City Ice Cream Company, of Savannah, Ga., has contributed \$250 to the Red Cross in lieu of penalties, for having more than a normal 30 days' supply of sugar on hand. The excess sugar was placed at the disposal of the government.

Adolph Berube, baker, 53 Palmer street, Fall River, Mass., ordered to close for four days and to contribute \$50 each to the Red Cross, Y. M. C. A., and Knights of Columbus for submitting false reports and using improper and insufficient substitutes in making bread.

Ballanca Macaroni Company, Buffalo, N. Y., license revoked from May 25 to August 25, 1918, for selling flour at a margin in excess of that allowed wholesalers, selling flour without substitutes, selling flour in excess quantities to small Italian bakers and dealers and doing business as a whole-

saler from November 1, 1917, to March 8, 1918, without a license.

Glasgow Milling Company of Kentucky, heretofore closed for operating without a license and profiteering, has paid \$350 to the Red Cross and will remain closed pending the receipt of his license from Washington.

The Model Roller Mills, of Kentucky, has been directed to close operations and to apply for permission to open after June 1.

Eight Chicago firms have been penalized by the Food Administration for violating its regulation prohibiting resales within the trade. O. D. Gilman Co., A. T. Ullman Co., and Feilchenfeld & Aaron have lost their licenses to engage in the egg business, the revocations to be effective for the duration of the war. The licenses of Oxley & Richter and Hornbeck & Hinton, as regards the egg business, were suspended for two months. Others who violated the rules were Turner, Clogg & O'Neill, who contributed \$325; Lepman & Heggie, who contributed \$400; and S. Love Kelly Co., who contributed \$275.

Twenty thousand dollars has been donated to the Red Cross by Jaburg Bros., a baker's and confectioner's supply concern at 10 Leonard Street, New York City. This contribution was made at the suggestion of the Food Administration, in lieu of further action on charges of selling sugar at excessive prices. An examination of the firm's books showed that from November 1, 1917, to January 18, 1918, the average advance on selling price over cost of both refined and raw sugar exceeded the margin fixed by the Food Administration.

For raising the price of his bread without first consulting the food administrator for his county, E. O. Kolb, a baker, of Scranton and Wilkes-Barre, Pa., has been required to restore the original prices and to make refunds of money received through the advance.

W. T. Harding, of New York City, a dealer in flour on the produce exchange, has contributed \$3,000 to the Red Cross, thereby securing cancellation of the order by which the Food Administration had revoked his license for 30 days, upon recommendation of the Federal food board of New York.

The violations for which the license was suspended, after a hearing, were, first, the sale of substantial quantities of flour to other jobbers, in violation of the rule forbidding resales within the trade; second, the sale of flour with insufficient substitutes or with no substitutes at all; third, the sale of flour to a baker who had no Federal license, violating the rule that forbids a licensed dealer to do business with another dealer subject to license, but who has none; fourth, the sale of quantities of flour and its substitutes at margins of profit in excess of those deemed reasonable by the Food Administration.

H. E. Adams, general store, Stillwater, N. Y., charging an excessive price for sugar and delivering flour without substitutes. Contributed \$25 to the Red Cross.

The New Haven Bread Company, New Haven, Conn., not using required substitutes in bread and making reports in improper form. License revoked for three days, effective June 3.

M. R. Kime, Pennville, Ind., selling flour without substitutes. License revoked from June 7 until August 7, 1918.

Samuel Scarfie, grocer, Rochester, N. Y., closed for two days for profiteering.

M. D. Liborio, grocer, Rochester, N. Y., closed for two days, selling flour without proper substitutes.

Mellios and Tourtas, bakers, Boston, Mass., closed for seven days for baking bread without proper substitutes.

M. Honigsbaum, grocer, Tannersville, N. Y., closed for two days for selling flour in excess quantities and without substitutes.

William Assid and Harger Brothers, Sioux Falls, S. D., supplies cut off for repeatedly refusing to comply with Food Administration rules concerning sale of substitutes.

Rissman Flour Company, Chicago, excess profits on barley. Contributed \$500 to the Red Cross.

The Schroeder Schnaarn Company, retail dealers, Savannah, Ga., violations of sugar and flour rules. Store closed for one week and a contribution of \$1,000 to be made to the Red Cross.

E. H. Minor, Vicksburg, Mich., mill closed for one week and a payment of \$25 to the Red Cross for excessive profits and for selling flour without substitutes.

Abraham Zion, wholesale grocer, Boston, Mass., license suspended from June 1 to September 1 and contributions of

\$300 to the Red Cross and \$300 to the Jewish Board for Welfare Work in the United States Army and Navy, for illegal transactions in sugar and flour.

American Hay Company, Goshen, Ind., license revoked for six months for refusing to accept nine cars of hay, for making speculative contracts, and for shipping hay of a quality below that contracted for.

W. B. Bingham & Son, Augusta, Ga., contribution of \$200 to be made to the Red Cross for making excess sales of sugar.

Charles and Angeline Mariano, grocers, Fredonia, N. Y., closed for one month for selling flour without substitutes.

Frank Wurz, Mishawaka, Ind., store closed for four days for selling sugar in excessive quantities.

Andrew Rogen, Granite Falls, Minn., miller, mill closed until further notice for making excessive deliveries of flour in the face of warning from Federal Food Administrator.

Boswell Baking Company, Canoy, Kan., closed for one day (May 31) for violations of Food Administration rules.

Hansen Bakery, Hutchinson, Kan., agreed to pay \$200 to the Red Cross for violations of food regulations.

C. J. Logan, of Portage, Mich., and Charles D. Hunt, of Benton Harbor, Mich., payments of \$15 and \$25, respectively, to the Red Cross for violations of flour regulations.

B. J. Ford, New, Ga., has contributed \$200 to the Red Cross, in lieu of other penalties, for selling sugar in excess quantities.

Sullivan's Lunch Room, Rochester, N. Y., closed on May 31 for violating wheat rules. Christ and Klotz, also of Rochester, closed May 27 for same violation.

Ferdinand Lanchesi, Rochester, closed two days for violating Food Administration rules.

P. H. McManus, baker, of Dover, N. H., contributed \$250 to the Red cross, in lieu of other penalties, for violating Food Administration rules.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,261,911. Hydrogenating resistant fatty material for edible purposes, etc. Carleton Ellis, Montclair, N. J.

1,261,995. Food product and method of preparing same. Charles F. Ampt, Wyoming, Ohio.

1,261,996. Food. Charles F. Ampt, Wyoming, Ohio.

1,262,144. Process of preparing food from corn. Manuel Villegas, Los Angeles, Cal.

1,262,319. Fish cutting and eviscerating machine. Paul W. Fleischer, New York, N. Y., assignor to American Can Co.

1,262,385. Die-pin for macaroni-machines. Frederick Penza, Brooklyn, N. Y.

1,262,399. Apple jam. Clarence H. Simpson, Front Royal, Va., assignor to Old Virginia Orchard Co., Inc., same place.

1,262,506. Method for making bread. William B. Johnson, Atlanta, Ga.

1,262,923. Pastry-making machine. Charles A. Costigan, Oakland, Cal.

1,263,009. Method of marking articles of the shredded-cereal-biscuit type. William E. Williams, Chicago, Ill.

1,263,237. Composition of honey and butter. Charles W. Harmon, Jacksonville, Fla.

1,263,434. Method of grinding and packing coffee. John E. King, Detroit, Mich.

1,263,609. Self-raising rice pancake-flour. William B. Schuyler, San Francisco, Cal.

1,263,742. Device for cutting and seeding peaches and other similar fruits. George B. Chase, Fresno, Cal.

1,263,998. Baker's oven. Waldo L. Bates, Boston, Mass.

1,264,336. Sterile butter-fat and method of producing the same. Charles E. Rogers, Detroit, Mich.

1,264,372. Machine for treating food products. George Cushen, Hamilton, Ontario, Canada.

1,264,487. Process for curing olives. William C. Buhles, Alameda, Cal.

1,264,533. Candy-making machine. William B. Laskey, Marblehead, Mass.

1,264,564. Non-alcoholic wine and process of making same. Joseph Russell, New York, N. Y.

1,264,591. Food product and process of producing same. Frederick C. Atkinson, Indianapolis, Ind.

1,264,592. Baking-powder and process of making same. Frederick C. Atkinson, Indianapolis, Ind.

1,264,600. Method of and apparatus for dehydrating fruits, vegetables, and similar articles. George H. Benjamin, New York, N. Y.

1,264,823. Machine for preparing fruits and vegetables. Elgie J. Lewis, Middleport, N. Y.

1,264,876. Food product and process of producing same. Robert Graham, Haymount, Cupar, Scotland.

Typhoid Infection from Bottling Plants.

The necessity for extreme cleanliness and care in the preparation of bottled beverages is emphasized by investigation made by the Kansas State Board of Health of the possible sources of typhoid infection.

On May 9, says the *Bulletin of the Department*, a case of typhoid fever occurred on the premises of B, who operated a bottling plant in the same yard area. The output of this plant consisted of the usual carbonated water products—pop, ginger ale, table water, and so forth. Infection in this case was probably due to contact or fly carriers from cases in the immediate neighborhood. A second case occurred in the same family June 17.

Up to this period water used at this plant came from an open well in the yard. An outside toilet existed on the premises and upon all adjoining premises. A water sample taken from this well July 3 showed presumption tests for *B. coli* 1 + in 10 cc. tube, 5 + in 1 cc. tube, and nitrogen as nitrates twelve parts per million, indicating not only temporary but a long history of pollution. The well was then closed and the plant installed city water supply.

Twenty cases gave history of origin in this block, and with numerous outside toilets, fly infection was an extremely probable cause in cases not due to direct contact. Inspection of the plant showed it to be without screens, and flies were found in the sirup room, so that aside from any contamination from the hands of those preparing sirups, fly infection was not only possible, but probable.

In the light of these findings the following histories are of interest:

Case occurring July 18 bought a case of pop July 4. Had not been away from premises; no access to city water; used milk and ice cream procured at home; gave no history of contact.

Case occurring July 20 attended a picnic July 4. Ate one dish of ice cream and drank several bottles of pop. Had access to city water, but used condensed milk; no history of contact.

Case occurring July 23 worked at fort and used fort water supply. Never ate ice cream nor drank milk; did not like fort water and consequently drank a great deal of pop instead.

Case occurring July 29 attended social fourteen days previous to onset. Ate no ice cream but drank two bottles of pop; used cistern water, milk from a neighbor with no history of typhoid, and patient had no opportunity for contact.

Seven other cases believed their infection was due to drinking pop, although each had other opportunities for infection.

Since the product from this plant constitutes practically the chief source of bottled pop used in the city, it is possible it was responsible for some infection. In a series of experiments Young and Sherwood (Kansas University, Lawrence) were able to recover the typhoid bacillus from bottled pop two weeks after implantation; hence there would be little reason to doubt this probability, considering all other factors.

The Fish Situation.

Probably no other food has ever had given it such active governmental advertising as has been the case during the past season with fish. The reason, of course, is obvious. Marine products of all kinds feed themselves. The most serious handicap under which the fisherman operates is what in amateur circles is called "fisherman's luck." During the past season, according to one well qualified to speak on the subject, the commercial fisherman was forced to combat circumstances which were extraordinarily difficult to overcome. At the commencement of the season the stocks of various kinds of fish were light and before mid-winter it was realized that there would be a very heavy demand for fish because of the work of the U. S. Food Administration and the Bureau of Fisheries.

These light stocks coupled with the assurance of a heavy demand logically called for a large production of fish, but unfortunately the severe winter so greatly interfered with winter fishing that the total available supply was much lower than ordinary. The long continued stormy weather on the Pacific Coast prevented a catch of the normal quantity of halibut and very bad weather on the Atlantic Coast interfered with winter fishing there. The fishermen on the Atlantic Coast had provided extra equipment which, because of the weather, they are not able to use. The heavy demand for frozen fish for export, such as is produced during the winter in the vicinity of Nova Scotia, took a large proportion of the supply of that which was produced.

Poor transportation facilities, both as to equipment and as to movement of cars when finally secured, delayed the marketing of such fish as were obtained. In fact, during January and February practically everything that transpired had a tendency to shorten the supply. With March there came a change in the weather but one which in the end did more harm than good. In the Lake Erie region, March was a warm month, as warm as a normal April, and as a result much commercial fishing equipment was placed in commission. In the early days of April, just about the time that the supply should have commenced to come in, very severe storms destroyed a great deal of the equipment on Lake Erie and made the spring fishing season in that region a failure. Meanwhile in the upper lakes region there was a delayed spring, both March and April being cold months, with the result that there was little fish coming from that district. In the vicinity of Chicago indications are that from the first of June on there will be a very heavy production of a large number of varieties of excellent fish. Especially should pike and pickerel be abundant, as well as whitefish.

Those who have been following the work of the Bureau of Fisheries will be interested in knowing that that Bureau has estimated the quantities of certain new fish marketed during 1917. The estimates are as follows: grayfish, 4,000,000 pounds; sablefish, 4,000,000 pounds; tilefish, 6,000,000 pounds; whiting, 20,000,000 pounds; burbot, 500,000 pounds; Alaska Scotch-cured herring, 2,000,000 pounds.

In commenting upon these figures the Bureau of Fisheries states that while the whiting has been gradually entering into consumption since its recommendation by the Bureau a number of years ago, its use has been greatly stimulated by the active campaign of publicity of the past year, modestly adding that not more than half of the quantity estimated can be attributed to recent activities of the Bureau and of the fish trade.

Estimated figures as to the consumption of sea mussel, eulachon, drumfish, shark and menhaden are not yet ready for publication.

Those concerned with the use of fish in the diet should at all times bear in mind the high economic value of frozen fish. During the summer this type of fish is not as much in evidence as is the case during the winter, but with the coming fall and winter months in mind every effort should be made to popularize the use of frozen fish properly handled. The prime essential is to keep the fish hard frozen just as long as possible. The retailer who thaws frozen fish before selling them is greatly lessening their food value and flavor.

Lucius P. Brown Suspended.

The recent investigation by the New York City administration of the work of the bureaus of its Department of Health has resulted in the suspension of the director of the Bureau of Food and Drugs, Dr. Lucius P. Brown. Following the appointment of Dr. Royal S. Copeland as commissioner of health, the chairman of the Civil Service Commission, Mr. James E. MacBride, filed charges against Dr. Brown, and these charges were simultaneously given to the public press. Director Brown answered the charges through the press, and for this action was suspended by the commissioner of health, pending a public hearing on charges which are now being prepared.

Various organizations have come to the aid of Dr. Brown, as he is deservedly popular with the trade as well as the consumer. His troubles are due to politics and not to inefficiency.

At a meeting of the New York Section of the American Chemical Society held on May 10, 1918, a set of resolutions were unanimously adopted which so aptly express the opinion of this JOURNAL as to Dr. Brown that they are quoted verbatim. Following a preamble pointing out the great value to the community of the trained chemist who is also an executive, and stating that because of the war there are in the country but few chemists available to fill Dr. Brown's position should he be dismissed, action which would necessarily impair the efficiency of the Bureau of Foods and Drugs of the Department of Health of New York City it was formally resolved:

First: That we urge upon the duly constituted authorities to preserve in every way possible, for the full benefit of the people of this city, the protection of the public health so largely dependent upon the work of this Bureau.

Second: That we are convinced that in the present incumbent of the office of Director of the Bureau of Food and Drugs, Dr. Lucius P. Brown, the city has a most valuable administrative, technical, and scientific official, selected on the basis of these qualifications by the impartial method of Civil Service Examination, experienced in his work through long service as Food and Drug Commissioner of Tennessee, a recognized leader among the food and drug officials of the nation, as witnessed by his presidency of their association and constant prominence upon important committees charged with the solution of fundamental food and drug problems, a man whose integrity is beyond question and whose marked faithfulness in administering the work of his present position assures to the people of this city thorough protection against adulteration of its food and drug supplies.

Third: That we commend the Commissioner of Health for his stand that any questions which have been raised regarding the administration of this important Bureau in the Department of Health shall be given a full and public hearing, for we are confident that through such a medium the usefulness and high standard of the Bureau will be continued without impairment.

Cereal Products Defined by U. S. Food Administration.

On May 22, 1918, Herbert Hoover, U. S. Food Administrator, issued the following special rules and regulations governing licensees for the importation, storage, manufacture and distribution of corn, oats, barley, barley flour, oatmeal, rolled oats, corn grits, corn meal, hominy, corn flour, starch from corn, corn oil, corn syrup and glucose.

RULE 6.—SPECIFICATIONS FOR HOMINY, GRITS, CORN MEAL AND CORN FLOUR. On and after July, 1, 1918, the licensee shall not quote or sell products of corn under the following designations unless the products conform to the specifications indicated thereunder.

The texture of product shall be determined by sifting with hand sieves clothed with the cloth specified, which shall be the standard bolting cloths now in use, whether of woven wire, grits gauze or bolting silk.

The analyses of products for moisture, fat, carbohydrates, fibre, ash or other quality or content, shall be made by the official methods of the American Association of Agricultural Chemists.

Pearl or Table Hominy—Shall be degerminated hulled corn, screened or dusted over a No. 10 wire cloth or 5/64 inch perforated metal, and shall not contain more than 14 per cent moisture and 1 per cent fat, by ether extraction.

Coarse Table Grits—Shall be made from hominy or clean, sound corn, ground and screened through No. 12 wire cloth and dusted over No. 16 wire cloth, and shall contain not more than 14 per cent moisture and 1½ per cent fat, by ether extraction.

Medium Table Grits—Shall be made from hominy or clean, sound corn, ground and screened through No. 14 wire cloth and dusted over No. 20 wire cloth, and shall contain not more than 14 per cent moisture and 1½ per cent fat, by ether extraction.

Fine Table Grits—Shall be made from hominy, or clean, sound corn, ground and screened through No. 16 wire cloth and dusted over No. 28 wire cloth, and shall contain not more than 14 per cent moisture and 1½ per cent fat, by ether extraction.

Cream Meal—Shall be made from hominy or grits, screened through No. 22 wire cloth and dusted over No. 72 grits gauze, and shall contain not more than 14 per cent moisture and 1½ per cent fat, by ether extraction, or 12½ per cent moisture and 2¼ per cent fat.

Corn Flour—This shall be made from hominy, grits, or cream meal, and shall be of a texture fine enough so that not less than 75 per cent will sift through No. 9XX bolting silk and balance shall sift through No. 72 grits gauze; shall be of an even color and shall contain not more than 13½ per cent moisture and 1½ per cent fat, by ether extraction, or 12½ per cent moisture and 2 per cent fat.

Standard Meal—Shall be made from clean, sound corn with approximately 10 per cent of feed removed and approximately 45 per cent of cream meal or grits extracted, and shall contain not more than 13 per cent moisture and 2 per cent fat by ether extraction.

Pearl Meal—Shall be made from clean, sound corn with approximately 15 per cent of the bran and germ removed, and if sold for export shall contain not more than 10 per cent moisture.

Plain or Unbolted Meal—Shall be made from clean, sound corn with approximately 5 per cent of bran and germ removed, and if sold for export shall contain not

more than 9 per cent moisture. "WHOLE," "OLD FASHIONED," or "WATER GROUND MEAL"—shall be clean, sound corn ground to a "soft" meal, and if sold for export shall contain not more than 9 per cent moisture.

NOTE TO RULE 6.—The moisture content for hominy, grits, cream meal and corn flour has been placed at the outside limit, and is not intended to limit contracts expressly providing for a lower moisture content. Exporters customarily require one-half per cent lower than the above limitations and many domestic buyers also properly demand the lower maximum. The Food Administration has fixed the maximum at the higher level with a view to protecting the smaller millers with less complete equipment engaged in local trade in which durability is not so essential. The larger millers with wider distribution should note the advisability of adhering to the lesser maximum in protecting their customers and their own trade.

RULE 7.—PACKAGE DIFFERENTIALS ON CORN MEAL. The licensee shall not sell corn meal, corn grits, or hominy, except on the basis of the following differentials:

BASIS 100 LBS. COTTON OR JUTE BAGS.

50 lb. cotton	.....	5 cents per 100 lbs. over basis
25 lb. cotton	.....	15 cents per 100 lbs. over basis
10 lb. cotton	.....	35 cents per 100 lbs. over basis
5 lb. cotton	.....	70 cents per 100 lbs. over basis
50 lb. paper	.....	10 cents per 100 lbs. under basis
25 lb. paper	.....	5 cents per 100 lbs. under basis
10 lb. paper	.....	10 cents per 100 lbs. over basis
5 lb. paper	.....	20 cents per 100 lbs. over basis
3 lb. paper	.....	45 cents per 100 lbs. over basis

Extra charge for burlapping, bailing or double sack-ing 35 cents per 100 lbs.

RULE 8.—CORN PRODUCTS MUST ARRIVE IN GOOD CONDITION. The licensee shall ship all corn products in such condition that they shall arrive at destination point in the United States, cool and sweet and in merchantable condition, unless there is an express agreement in writing to the contrary.

California Fishing Restrictions Suspended.

Under authority of the Food Control Law, Food Administrator Ralph P. Merritt of California has suspended for the period of the war the state law prohibiting the sale of deep-sea game fish, modified the law against trawlers in the ports of Los Angeles and San Diego, and removed restrictions forbidding the use of three-mesh net and nets with strings in waters north of Vallejo light, in the upper San Francisco Bay.

The modified fishing laws became effective early in March. Mr. Merritt acted after an all-day conference with members of the State Fish and Game Commission, W. C. Crandall of San Diego, federal fish commissioner, and fishermen from all parts of the state. He said he found fishing equipment in San Francisco poorer than that of any large seaport in the United States.

Hereafter all game fish caught must be marketed under a section of the Food Control act providing a penalty for destruction of foodstuffs; heretofore fishermen, forbidden to sell deep sea game fish, have thrown them back into the ocean.

Mr. Merritt expects fifty tons of fish a week will be added to the supply without affecting protection of game fish.

National Confectioners' Convention.

During the week of May 7-11, the Annual Convention of the National Confectioners' Association was held at the Edgewater Beach Hotel in Chicago. It was a well attended gathering, and seemed to be pervaded with a spirit of desire to help the Government in its efforts to control, equitably to all concerned, the availability of the situation with regard to sugar fully and fairly. Mr. Hughes' membership in the U. S. Food Administration permitting him to speak with the voice of authority. The activities of Secretary Hughes have been of considerable and quite legitimate assistance to the industry whose interests he represents. At the time that the Senate Finance Committee was considering taxing the confectionery industry to the extent of \$15,000,000, his efforts were, at least in part, responsible for the non-enactment of the tax. Mr. Hughes stated that the sugar used by candy manufacturers during the year 1916 was about 350,000 tons, or approximately 8 per cent of the total quantity consumed in the United States. These figures were given in order to eliminate the erroneous impression in the public mind that the confectionery industry uses half of the total amount of sugar consumed in the United States.

During the course of the convention the association adopted a resolution pledging their support to the President and the Government of this country in all efforts contributory to winning the war, and one going on record as being opposed to the use of punch-boards and similar forms of gambling devices in connection with the sale of candy.

The officers elected were as follows: President, Mr. R. R. Cleeland, Kibbe Brothers Company, Springfield, Mass.; vice-pres., Mr. Paul F. Beich, Bloomington, Ill.; vice-pres., Mr. A. S. Colebrook, Rochester Candy Works, Rochester, N. Y.; secy.-treas., Mr. Walter C. Hughes, Chicago; executive committee—Messrs. V. L. Price, National Candy Company, Chicago; Geo. F. Schrafft, Boston, Mass.; Jerome F. Blome, Baltimore, Md.; Wm. F. Heide, New York, N. Y.; F. Bidlack, American Caramel Company, Lancaster, Pa.; L. C. Blunt, W. C. Nevin Candy Company, Denver, Colo.; J. K. Farley, Jr., Chicago; H. E. Littlefield, Knoxville, Tenn.; H. J. Mueller, St. Joseph, Mo.

During the course of his annual report to the National Confectioners' Association, General Counsel Thomas E. Lannen of Chicago mentioned a recent U. S. Supreme Court decision which is of general interest, inasmuch as the rule of law laid down applies to all food products. The case was that of O. J. Weeks & Company v. United States (245 U. S. 618). Holding that the Food and Drugs Act defines at least two kinds of misbranding, "one where the article bears a false or misleading label, and the other where it is offered for sale under the distinctive name of another article," the U. S. Supreme Court's decision is in effect that if a salesman, with the sanction of his employer, obtains an order for an article to be shipped in interstate commerce by offering the article for sale in the distinctive name of another article, the article will be deemed to be misbranded and the employer will be guilty of violating the Food and Drugs Act for shipping it, even though when shipped the article is in every way properly and legally labeled. Thus if a salesman, with the sanction of his employer, represents a product which is not pure chocolate to be pure chocolate and thereby obtains an order for the product, and the employer

ships the product, an offense for which the employer can be held liable is committed, even though the product when shipped is in every way properly and legally labeled to show that it is not pure chocolate.

The balance of Mr. Lannen's report to his associates has to do with: the abortive efforts on the part of Congress to repeal the drawback in sugar, to tax the confectionery industry *per se* an even \$15,000,000, and to tax corn sirup, cocoa, molasses and other foods which enter into the composition of confectionery; state legislation pending in the dozen states whose legislatures met this year; the working out of the Food Control Law; federal war taxes; the Child Labor Law; and other legal and administrative matters of especial interest to confectioners.

Retail Grocers Convene.

During the week ending May 23d, the National Retail Grocers' Association held its annual convention in Chicago. Its activities as briefly summarized by the resolutions passed included pledging support to President Wilson and the U. S. Food Administration in all measures of food conservation; going on record as against the use of trading stamps and similar premiums; suggesting the advisability of a 10-hour maximum day; the sale of all merchandise by weight or numerical amount; the suggestion that the secretaries of all local grocers' organizations be made official members of the Food Administration; the approval of the request of Food Administrator Hoover for an appropriation of \$7,000,000 to carry on the work of his department.

The contest for the presidency aroused considerable interest, Mr. Sol Westerfeld of Chicago having run against former President Schaefer, who was re-elected. The vote was 91 to 83.

During the convention there was some criticism of the activities of food administration officials but nothing of any serious import.

Bakers' National Convention May Be Abandoned for 1918.

The national convention of bakers which was scheduled for Boston this year may not be held. The war has been responsible for many changes of policy. Secretary Bell of the National Association says:

"Whether or not a national convention of bakers will be held in 1918 depends upon conditions and circumstances as yet undeveloped. At the present time it looks very doubtful.

"However, the importance of bakers' meetings in these times is so evident, that it is altogether probable that Chicago will be the scene of one or more conferences during the next months. National conferences, such as that held in Chicago in May, 1917, which resulted in the plan to open negotiations with the Food Administration on behalf of the baking industry, and the conference held in March, 1918, also in Chicago, which launched the big service plan of every baker 'his brother's keeper' in order that the industry may solve its own problems and thus most efficiently help to solve the nation's problems—such conferences as these have recommended themselves highly by their results and are more likely to win favor among business men in these times than the old time convention with its expensive and unessential accessories."

Wholesale Brokers Advertise Potatoes.

Although they are not financially interested in the sale of potatoes, fourteen of the wholesale brokers of Omaha are carrying on an advertising campaign in that city urging upon the Omaha public the advisability of eating potatoes. They are making use of the daily papers and also have provided an ample supply of slides for use in moving picture theatres—one for each such establishment in the State of Nebraska.

Public Hearings on Butter.

Public hearings on tentative standards for butter, to be held in Washington, D. C., at the Bureau of Chemistry, June 24, 1918, and at the St. Paul Hotel St. Paul, Minn., on June 19, 1918, are announced by the joint committee on definitions and standards consisting of representatives of the United States Department of Agriculture, the Association of Official Agriculture Chemists and the Association of American Dairy, Food and Drug Officials. All persons interested are invited to attend. Those who desire may present their views in writing to the secretary of the committee, Bureau of Chemistry, Washington, D. C., on or before the date set for the hearings.

The committee desires to obtain from the trade and others their views with respect to whether a standard for butter should be based upon butter fat; butter fat and water; butter fat, water and casein; or butter fat, water, casein and salt, and as to what the limit or limits of composition should be, according to reasonably good commercial practice. The Washington hearing will be held at 10 a. m., in the Bureau of Chemistry building, 216 Thirteenth Street, Southwest. The St. Paul hearing will be held at 10 a. m. in the St. Paul Hotel.

Jam, Jelly, Preserve and Condiment Packers Organize.

At a meeting recently held in Washington, D. C., by prominent jam, jelly, preserve and condiment packers it was unanimously decided that an association of national scope and prominence be formed to promote the interests of this important industry.

The association is now in the process of formation, and the following members constitute the committee:

Marcus Blakemore, chairman, care of Curd & Blakemore Co., Louisville, Ky.

R. U. Delapenha, care of R. U. Delapenha & Co., Inc., 17 Jay St., New York, N. Y.

M. G. Clymer, care of Best Clymer Mfg. Co., St. Louis, Mo.

Orville D. LaDow, Hotel Raleigh, Washington, D. C.

W. T. Gaylord, Sodas, New York.

Oscar T. Sewell, secretary, care of Gibbs Preserving Co., Baltimore, Md.

There will be a general meeting called in the near future to complete arrangements, and perfect further details. The date of this meeting will be announced later by the present committee. Questions of vital importance to the industry will be discussed and every one who is at present engaged in these lines is urged to communicate promptly with the member of the committee situated nearest to him for further details.

Milk Testers Are Prosecuted in Illinois.

Shiftless methods whereby good milk or cream is allowed to deteriorate and spoil on the premises through failure to properly cool the product and by delaying deliveries are to be stamped out in Illinois if present efforts of the Hon. John B. Newman, superintendent of the Division of Foods and Dairies, are successful. On the basis that the best butter can be produced only from clean, untainted cream, Mr. Newman has recently been directing a drive against Illinois milk and cream testers who have been operating without legal authority. Already five officials have been fined and the work is still continuing. Mr. New-

man intends if possible to stop the sale of spoiled cream before it can be churned into butter.

Thirty Illinois Dealers Fined for Watering and Skimming Milk.

Thirty milk dealers and restaurant proprietors fell into the net spread in East St. Louis, Ill., a few weeks ago by the Illinois Food Department to stop the sale of adulterated milk. Each defendant was fined and warned that future violations would meet with a much heavier penalty.

The campaign was planned by Superintendent Newman of the Division of Foods and Dairies, following complaints that milk sold by some of the dealers was below the state standard of 3 per cent butterfat. On account of the number of cases it was decided to hold the hearings locally instead of summoning the dealers to Chicago. Samples were taken the first day and analyzed in the Government laboratories in St. Louis.

Assistant Superintendent McLaughlin and Chief Clerk Miner had charge of the prosecutions. The defendants, after agreeing at the hearings to plead guilty, went to the justice court where they paid their fines. The first case was called at 2:30 in the afternoon and by 5:30 the last had been disposed of.

No attempt was made by any of the defendants to fight the cases. Although the milk was deficient in butterfat, none of the defendants admitted knowledge that the milk had been diluted with water or had been skimmed at the time of sale. Milk obtained from one restaurant contained but three-tenths per cent of butterfat. The proprietor explained that the milk must have been obtained from the skim milk supply in the kitchen used for cooking purposes only. The inspector's testimony, however, showed that he had called for a glass of milk and that he had taken this as a sample when it was served to him at the lunch counter.

"Some of the help must have gotten into the wrong can, then," was the excuse offered by the defendant. "I'll fire 'em, if I ever catch 'em at it."

He received the same warning as the others, being told that as this was his first offense, the minimum fine would be imposed, but that repetition would meet with a much heavier penalty.

Canada Adopts Price Maintenance as a War Measure.

It would appear as though the food conservation rules of war-time have given the Canadian grocers a chance to put into tangible operation at a single stroke all the price maintenance plans for which the food manufacturers of the United States have struggled so long—with the Stevens bill and various other measures—and thus far unsuccessfully.

One of the rules suggested by a trade committee and understood to have been adopted by the Food Controller of the Dominion, provides as follows:

"In the sale of any proprietary or trade marked goods to the consumer, through the medium of the wholesaler and retailer, and upon which the manufacturer has established a reasonable selling price to the consumer, and who is using the retailer and wholesaler as a medium of reaching the consumer, the manufacturer shall have the right to protect his interests (and those of the trade who are assisting in the distribution of his products) by refusing to supply any dealer who violates his selling contract.

"On any proprietary or trade marked brand, the manufacturer shall not have the right (having regard to quantity) to sell to one retailer on a better basis as

to price and terms than to another retailer, neither shall he have the right to sell to a wholesaler on a lower basis of price, quantity and terms than to another wholesaler, having regard to the price, quantity and terms ruling on the date of sale."

A wholesaler selling a proprietary or copyrighted brand of food products, the price and terms of which have been fixed as to the retail trade by the manufacturers or packers thereof, shall not be permitted to charge more than the price fixed by the manufacturer or packer, and to sell at less than the stipulated price by rebating or otherwise will be considered equivalent to a violation of the Secret Commissions Act, and will render the offender subject to such penalty as the Food Controller may impose, but shall not be less than \$50, and if persisted in shall involve the cancellation of his license.

Wisconsin Skim-Milk Cheese Law.

Since the present skim cheese law was passed in 1898, it has been unlawful in Wisconsin to manufacture skim-milk cheeses of any kind, unless made 10 inches in diameter and 9 inches high, so that they could readily be recognized by their size and shape, and distinguished in this way from whole-milk, American, Swiss, brick or Limburger cheese. For many years past there has been little or none of this 10 by 9-inch cheese made, and dealers in factory supplies do not even list this size of cheese hoop in their catalogs. Attempts in recent years to change the law have been defeated through a strong opposition raised by thousands of cheesemakers and many thousands of cheese factory patrons and farmers throughout the state, who wish to protect this industry.

Besides the four standard whole-milk varieties of cheese mentioned above, there has also grown up a considerable demand for cottage cheese and products made from it, as hand cheese, sap sago, gammelost, kochkaese, etc., and also for Neufchatel cheese, made from skim milk. Because of the difficulty of importing from Europe certain Italian varieties of cheese, such as Parmesan, Reggiano, caccio cavallo, ricotta, kaseri, feta, etc., eaten by the Italian and Greek trade in this country, a few factories have found a demand for these products which are made from skim milk, or part skim milk or whey. In general, these cheeses, and certain French varieties as Brie, Camembert, etc., are made in shapes and sizes of their own and differ so much in appearance, flavor, etc., from our four standard varieties that they could not be fraudulently substituted in the market. On this account there seems to be no reason why the manufacturer of these special varieties of skim-milk cheese should not be legalized in Wisconsin, through an amendment to the skim-milk cheese law of 1898, if this can be done without at the same time permitting the use of skim milk in the making of American, brick and Limburger.

In connection with the coming special session of the Wisconsin legislature it is of interest to remember that only those subjects mentioned in the Governor's call for the session may be considered at that time. The following paragraph taken from the call appears to be worded with the purpose and effect of fully protecting the great Wisconsin whole-milk cheese industry.

"To amend section 4607c of the statutes, so as to permit the manufacture and sale of skimmed-milk cheese, providing the same shall be made in a form or forms neither in appearance nor shape imitating or resembling whole cream cheese."

United States Department of Agriculture

Office of the Secretary, Washington, D. C.

FOOD INSPECTION DECISION 175.

COLORS IN FOOD.

(Amendment to Food Inspection Decisions 76, 117, 129 and 164.)

Food Inspection Decision 164 is hereby amended by adding to the list of permitted dyes contained therein, under "*Yellow shades*," the words:

11. Sudan I.

16. Butter yellow.

Yellow A. B. (Benzeneazo- β -naphthylamine).

Yellow O. B. (Ortho-Tolueneazo- β -naphthylamine).

Food Inspection Decisions 76, 117, and 129 are also amended so that, hereafter, the coal-tar dyes which may be used in food, subject to the provisions of Food Inspection Decisions 76, 117 and 129, shall be the following:

Red shades:

107. Amaranth.

56. Ponceau 3 R.

517. Erythrosine.

Orange shade:

85. Orange I.

Yellow shades:

4. Naphthol yellow S.

94. Tartrazine.

11. Sudan I.

16. Butter yellow

Yellow A. B. (Benzeneazo- β -naphthylamine).

Yellow O. B. (Ortho-Tolueneazo- β -naphthylamine).

Green shade:

435. Light green S. F. yellowish.

Blue shade:

692. Indigo disulfoacid.

The numbers preceding the names refer to the numbers of the colors as listed in A. G. Green's edition of the Schultz-Julius Systematic Survey of the Organic Coloring Matters, published in 1904.

W. G. McADOO,

Secretary of the Treasury.

D. F. HOUSTON,

Secretary of Agriculture.

WILLIAM C. REDFIELD,

Secretary of Commerce.

WASHINGTON, D. C., April 4, 1918.

A Method of Getting Grease from Sewage.

Experiments in the recovery of grease from sewage sludge have been conducted the past three years in Boston by Prof. Robert Spurr Weston, of the Massachusetts Institute of Technology. These experiments have led to a process now embodied in workable form, which consists of recovery by the precipitation of the sewage by the use of an acid, the grease then being removed and the residue sold for fertilizer. The grease is precipitated by the use of sulphur dioxide as a solvent, the latter being so strong a disinfectant that the treated sewage contains few bacteria. More than 21 per cent of grease is recovered from the dry sludge, and in addition 1,300 pounds of fertilizer base per million gallons of sewage. Cost of treatment is low, yielding 25 per cent profit.

Plans for New England Poultry Producers' Exchange.

At a meeting at Boston recently plans for the organization of a New England Poultry Producers' Exchange were discussed in the presence of more than 200 poultry producers from all sections of New England. Walter B. Farmer of Hampton Falls, N. H., presided. Howard B. Gilmore, who attended the recent meeting of poultrymen in Chicago called by Mr. Hoover, read a report advocating such organization in New England. Such a step he deemed necessary for the reason that the prices of corn and grain have advanced and poultry supplies from other markets have been supplying New England. He said prospects in New England were very discouraging unless poultrymen here organized and saw to the proper marketing of their goods. It was stated at the meeting that New England as regards poultry raising and the marketing of eggs was far behind other sections and that as a result persons in New England had to buy their eggs and poultry from the West and South.

The proposed organization will have as its object the increasing of the New England output and will have a representative in the Boston market, who will report conditions back to the producers.

A Sugar-Saving Test.

The proportion of sugar needed for making jellies depends upon the nature of the fruit. Much waste of sugar and spoiling of jelly can be avoided in manufacturing establishments by the use of a simple alcohol test devised by the Bureau of Chemistry. A spoonful of fruit juice is put into a glass and a teaspoon of 95 per cent grain alcohol is added and mixed by gentle shaking. Then pour slowly from the glass, noting how the pectin (the substance in fruits which makes them jelly) is precipitated. If the pectin is precipitated as one lump, a cup of sugar may be used for each cup of juice; if in several lumps the proportion of sugar must be reduced to approximately three-fourths the amount of the juice. If the pectin is not in lumps, but is merely precipitated, the sugar should be one-half or less of the amount of the juice. If the juice shows no precipitation under this test, it is unsuitable for jelly making and must be combined with apples or other juices rich in pectin.

Seize Cases of Olive Oil in Chicago.

Large quantities of olive oil alleged to be adulterated and misbranded recently were seized by Illinois food inspectors engaged in investigating what is believed to be one of the most expensive schemes that has come to the attention of the Illinois Department of Agriculture for defrauding small dealers and the public in the sale of this product. The oil was put up in gallon and half-gallon cans, with fancy labels in bright colors stating the contents to be "pure olive oil imported." Samples analyzed were found to contain 75 per cent of cottonseed oil.

The Italian Products Distributing Co. has been made defendant in connection with the sale of 200 cases to the Phoenix Importing Co. At a preliminary hearing before John B. Newman, superintendent of the Division of Foods and Dairies, representatives of the company admitted that cottonseed oil had been mixed with the olive oil, but sought to justify this by asserting that the labels described the contents as "blended." It was only after a minute examination of the labels that

food officials were able to obtain any trace of such marking. The stamp to imprint the word "blended" had been used in such a way as to make the letters illegible.

The case first came to the attention of Superintendent Newman through the proprietor of the Nasiacos Importing Co., 742 Blue Island Avenue, Chicago, who said he had purchased 50 cases, each containing 12 gallons, from the Phoenix Importing Co. and requested that a sample be analyzed by the state chemists.

Color Test for Orange Maturity Proves Success.

State Commissioner of Horticulture G. H. Hecke of California, who is the authority in control of the operation of the fruit standardization law which covers orange testing for maturity, has officially come out in favor of the color test, rather than the test based on acid content, known as the "eight-to-one" test. As reported in the *California Fruit News*, Mr. Hecke says, following last fall's orange shipping campaign in northern and central California: "At the present time it would seem that the best test of maturity is color."

This season the "eight-to-one" standard did not have the effect of preventing the shipment of perfectly green oranges. Fruit that was left on the trees until it was "substantially colored" was far more desirable for shipping purposes than much of the "eight-to-one" green fruit which left some of the principal citrus growing sections last fall. In sections where ordinarily oranges do not test "eight-to-one" until they are quite well colored, last year fruit was produced that tested better than this required amount long before there were any signs of ripening. Some of this fruit that tested "eight-to-one" was so green that it could not even be colored properly by sweating. The high ratio was due not to a high sugar content, which is the reason for the "eight-to-one" test, but to a very low acid content. This season the acid content was lower than usual, and consequently the "eight-to-one" ratio obtained before it should. Another season the "eight-to-one" test might be perfectly satisfactory in certain sections where this year it was a failure.

Dehydration of Fruits and Vegetables.

The Potato and Dehydrating Section of the U. S. Food Administration has prepared a memorandum on dehydration of fruits and vegetables. This memorandum explains the process of dehydration and states that properly dehydrated products have the same nutritive value as when fresh, their physical texture is practically unaltered and they are little affected in taste. They have been highly recommended by army officers for camp use and by dietitians for use in hospitals. Dehydration reduces bulk from one-third to one-fifth and weight from one-sixth to one-twelfth. The Food Administration is endeavoring to standardize dehydration processes.

Soda Fountains for England.

The manufacturers of soda fountains in some sections of the country are working day and night employing three shifts to fill orders received from Great Britain for soda water machinery. The unusual rush is the result of an increasing demand for carbonated, non-alcoholic drinks by the American and Canadian troops, as well as their British brothers, who have developed the taste for soda water, or as they call it, "aerated" water.

Before the war it was frequently said that London possessed only one real soda fountain, but today fountains are being installed all over the British Isles.

Bottle Makers Agree to Curtail Production.

Representatives of the Automatic Machine Bottle Manufacturers' Association have voluntarily agreed with the U. S. Fuel Administration to curtail their production of less essential articles, both in the interest of fuel conservation and to give the utmost possible opportunity for the manufacture of glass jars and other food containers.

Specifically, those bottle manufacturers who are not occupied entirely with the manufacture of food containers will curtail their total output 15 per cent, the curtailment to be effective in the less essential portion of their production.

A very large quantity of fuel is consumed in the manufacture of glass articles, and the effect of this arrangement will be to concentrate the manufacture of bottles upon those which are necessary for food and medicinal purposes.

Fuel Administrator Garfield has issued an order dealing with the production of enameled ware. The reduction in this case is 50 per cent.

Definitions and Standards for Condiments.

Definitions and standards for 50 condiments are contained in Service and Regulatory Announcement No. 22, Bureau of Chemistry, U. S. Department of Agriculture. The publication also states the position the department will take with regard to baking powder, "water-ground" corn meal, canned "red beans," canned crawfish, prepared mustard, sorghum and molasses and figs, use of "mineral oil" as slab dressing in candy manufacture, and "blood orange" flavoring.

Cold Storage Legislation.

The latest attempt to hamper the cold storage industry is House Bill No. 8930, introduced on January 8 by Congressman Cary and referred to the Committee on Interstate and Foreign Commerce. It seems surprising that legislation of this sort should still be proposed. This bill proposes that veal, pork and sheep shall not be stored longer than four months, lambs three months, while poultry, game, fish, eggs and butter are also restricted to three months. This in the face of the fact that representatives of the Department of Agriculture are on record as published in various reports, particularly regarding eggs, as stating that not even the most delicate palate can detect the storage taste in eggs until held longer than six to eight months, and even after eight and nine months the eggs are good for practically all purposes except soft boiling or poaching.

Cold storage houses are now licensed by the United States Food Administration, which has established rules and regulations, governing the handling of goods, period of storage, and, in a general way, all matters necessary for protecting the interests of the public and strengthening the industry in its co-operation with the Government. It is believed that these rules are ample for all public needs.

In state legislation there are also a number of efforts being made, one of these being Senate Bill No. 186, introduced January 16, 1918, in the Massachusetts Senate by Mr. McLaughlin, which was read and referred to the Committee of Public Health, as follows:

An Act relative to the sale of meats, eggs and provisions kept in cold storage. Be it enacted by the Senate and House of Representatives in the General

Court assembled, and by the authority of the same, as follows:

Section 1. No meats, eggs and provisions shall hereafter be sold in this commonwealth which have been in cold storage for a period of over six months.

Another bill introduced as Bill No. 865, on January 16, 1918, by Mr. Moynihan and referred to the Committee on Mercantile Affairs, reads as follows:

An Act to require the marking of candy and confectionery placed in cold storage. To be enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. All candy and confectionery which is placed in cold storage shall be marked with the date upon which it is placed in said storage, and all such candy and confectionery shall, upon being taken from cold storage, be marked with the date upon which it is taken from cold storage. All such candy and confectionery which has been at any time in cold storage shall be plainly marked "cold storage candy" or "cold storage confectionery" either upon itself, its wrapper or the box in which it is offered for sale.

From this latter bill it would seem that confectionery goods may be kept in ordinary storage for months at a time without any restrictions, whereas when the manufacturer endeavors to place his goods in cold storage and preserve them in the best possible shape, he is required to label them in a manner that cannot be construed other than contrary to his best business interests.

Artificially Colored Salmon.

On a tour of inspection an inspector of the Boston Health Department found in one of the large fish-curing establishments in the city a unique way of making salmon marketable.

Salmon, which in the trade is known as "fall" or "dog" salmon and is of a dirty, grayish color, and of inferior grade, is given a coat of coloring. After painting, the fish is later smoked and shows a real salmon hue so that it becomes most attractive to the purchaser. Specimens of the salmon, the liquid used, as well as the brush and bucket, were brought to the department's office and examinations made. The analysis has shown this liquid to be a coal-tar product, and consequently a food adulteration calling for prosecution in court.

In talking with an employe at this establishment the inspector was told that the liquid was used for painting trucks. It gives a permanent dye to absorbent cotton, wool, etc., and a handkerchief was dyed a beautiful salmon color with the mixture.

Packaged Foods in the Movies.

A unique method of demonstrating to the public the desirability and the ultimate economy in using packaged goods was introduced, with motion pictures, at the annual meeting of the Folding Box Manufacturers' National Association, held at the Hotel Astor, New York, February 11.

This film, made by the industrial department of the Universal Film Manufacturing Company for the National Packaging Machinery Company of Boston, vividly portrays the processes of making up cartons, filling them with goods, mechanical weighing, testing the weight, mechanical closing and wrapping of the filled carton in waxed paper, and proving the waterproof qualities of the package.

RETAIL PRICES

Average Price per Pound.	Average Price per 100 Calories		Lima, Ohio (Typical Small Town)	Boston, Mass.	Providence, R. I.	Buffalo, N. Y.	New York, N. Y.	Trenton, N. J.	Harrisburg, Pa.	Pittsburgh, Pa.	Cincinnati, Ohio	Cleveland, Ohio	Columbus, Ohio	Indianapolis, Ind.
CEREAL PRODUCTS														
6.3	.39	Wheat Flour, War Std., 49-lb. bag.....	330	290	320	280	340	320	360	340	300	325	320	343
7.3	.46	Rye Flour, Std., 24½-lb. bag.....	200	196	168	150	190	245	180	240	150	200	.....	.....
7.3	.44	Graham Flour, 10-lb. bag.....	70	60	70	65	80	100	70	80	75	.....	70	.....
11.0	.67	Corn Starch, lb.	10	9	10	12	9	12	12	12	12	10	15	14
7.7	.48	Corn Flour, 5-lb. bag.....	35	40	35	45	45	40	35	50	35	35	35	40
6.3	.39	Corn Meal, lb.	6½	6	6	6	7½	7	8	6	6	7	5½	6½
8.0	.48	Barley, Flour, lb.	7½	8	6	6	8	9	8	8	7½	10	6½	7½
8.9	.49	Oat Meal, lb.	12	9	8	7	8	8	11	9	8	9	7½	10
8.4	.46	Oats, Rolled, Bulk, lb.	9	7	6	7	7	8	11	8	8	9	6½	8½
12.5	.76	Rice Flour, lb.	15	13	12	12½	12	14	15	10	12½	15	12	12½
10.7	.68	Buckwheat Flour, lb.	10	9	10	8	9	10	12	10	10	10	.....	12
8.7	.54	Hominy Grits, lb.	11	8	7	.....	8	8	.....	8	7½	10	7½	.....
10.2	.56	Armour's Oats, 1 lb. 4 oz.	13	.....	12	11	12	10	14	12	.....	12	15	.....
10.8	.60	Purity Oats, 1 lb.	12	.....	.....	.....	13	10	11	11	.....	12	.....	.....
10.0	.55	Quaker Oats, 1 lb. 4 oz.	13	9½	10	12	10	11	14	12	12	12	10	12
12.6	.80	Rice, Fancy, Head, lb.	15	12	11	12	11	13	13	10	12	12	12	15
11.3	.70	Barley, Pearled, lb.	15	10	10	15	8	8½	13	7	10	10	10	11
9.8	.83	Bread, lb.	10	.....	10	10	8	9	10	10	10	10	8	10
21.5	1.13	Crackers, Graham, lb.	22	23	20	20	22	22	24	22	20	22	17	22
21.7	1.13	Crackers, Oatmeal, lb.	22	23	25	22	22	22	22	22	20	22	17	.....
13.7	.84	Macaroni, lb.	18	.....	15	13	16	12	20	9	15	13	16	15
SUGARS AND MISCELLANEOUS														
9.0	.49	Granulated Sugar, lb.	9	9	9	9	8¼	8½	9½	9	9	9	8½	9½
8.5	.59	Corn Sirup, 10 lb. pail.	90	.....	90	85	90	108	75	.....	75	85	75	75
27.6	1.86	Comb Honey, lb.	28	.....	.....	25	25	24	.....	25	35	35	.....	32
31.1	1.38	Cocoa, Bulk, lb.	40	28	25	25	20	30	35	30	25	30	20	35
27.0	4.50	Eggs, Fresh Gathered, firsts, doz.	39	55	54	45	55	45	35	40	36	41	35	38
5.9	1.93	Milk, qt.	12	14	14	13	10	12	12	14	13	13	13	11
33.0	1.59	Cheese, American Cheddar, lb.	35	33	35	35	35	35	40	30	35	28	28	39
FATS														
52.9	2.23	Bacon, Sliced, lb.	60	52½	50	50	45	55	55	50	50	44	50	50
50.0	1.43	Butter, Fancy, Creamery, lb.	52	47	50	52	50	52	55	49	52	50	45	45
32.7	.80	Lard, Pure Leaf, lb.	35	33	32	33	35	30	35	27	30	30	35	32
33.7	.99	Oleomargarine, Uncolored, lb.	35	32	35	34	30	36	26	31	35	29	32	35
33.4	.95	Nut Margarine, Uncolored, lb.	35	31½	31	30	30	32	24	33	33	30	33	34
86.3	2.16	Italian or Spanish Olive Oil, qt.	180	165	150	160	140	220	125	200	200	200	150	210
38.2	.95	Cottonseed Oil, qt.	85	75	65	75	60	75	.....	65	75	.....	75	83
37.0	.97	Corn Oil, qt.	75	65	70	75	75	65	.....	70	75	.....	60	69
39.3	.98	Peanut Oil, qt. ....	.....	.....	.....	.....	75	80	.....	.....	.....	.....	.....	.....
27.7	1.01	Peanut Butter, lb.	30	23	25	25	35	24	40	22	35	26	22	35
FRUITS AND VEGETABLES														
20.2	1.16	Evaporated Apples, lb. ....	.....	28	23	21	20	25	15	25	.....	.....	.....	24
17.2	1.43	Evaporated Peaches, lb.	20	30	18	16	18	17	18	20	18	15	18	15
13.5	6.29	Canned Peaches, No. 2½, Std., 29 oz.	25	24	22	25	20	25	30	25	25	25	20	25
14.5	2.07	Canned Pineapples, No. 2½, Std., 30 oz.	35	25	20	25	28	32	30	35	30	25	25	30
15.5	.99	Raisins, Seeded, per pkg., 15 oz.	15	14	14	15	14	14	15	15	15	13	14	15
15.3	1.32	Prunes, Medium Size, lb.	15	20	15	14	16	15	17	15	15	13	16	14
2.2	.73	White Potatoes, lb.	2¼	2¾	2⅓	2	4	3	2	3⅓	2	4	2¼	2
8.4	1.87	Sweet Potatoes, lb. ....	.....	.....	10	.....	10½	.....	.....	.....	.....	.....	.....	.....
4.7	2.35	Onions, lb.	6	6	6	4	7	6	.....	2½	5	6	7	6
18.0	1.15	Navy Beans, Dry, lb.	20	16	16	20	17	18	20	15	16	16	20	19
14.5	1.61	String Beans, Cnd., No. 2, Std., 19 oz.	15	18	17	22	13	16	18	15	18	20	14	23
13.2	3.00	Corn, Cnd., No. 2, Std., 20 oz.	12½	20	15	20	16	16	18	17	15	20	17	15
12.8	5.12	Peas, Cnd., No. 2, Std., 20 oz.	18	17	19	20	14	16	18	16	15	15	12½	15
15.2	.96	Split Peas, lb. ....	.....	13	13	15	13	16	.....	14	12	15	12	23
22.1	1.19	Peanuts, Unshelled, lb. ....	.....	.....	.....	20	18	.....	.....	.....	25	.....	20	23
8.9	8.90	Tomatoes, Cnd., No. 3, Std., 33 oz.	15	22	22	25	20	20	20	22	20	25	25	19
4.6	3.83	Cabbage, lb.	6	4	4	4	5	5	4	5	3	5	5	5
4.9	2.29	Beets, lb.	2	.....	10	.....	10	.....	.....	3	.....	.....	.....	.....
3.9	2.17	Turnips, lb.	2	5	4	.....	5	.....	.....	3	.....	.....	.....	.....
MEATS AND FISH														
39.7	6.10	Beef, Round Steak, lb.	40	49	51	38	45	45	30	40	35	35	35	32
38.3	7.67	Veal Cutlets, lb.	45	50	48	33	48	45	32	40	35	38	40	50
36.0	4.14	Leg of Mutton, lb.	35	35	.....	.....	35	48	28	38	28	35	32	45
41.1	4.89	Leg of Lamb, lb.	45	36	38	35	42	40	50	38	45	38	50	60
36.2	2.96	Pork Chops, lb.	40	35	38	38	45	38	32	32½	35	32	32	32
49.4	2.60	Ham, Sliced, Medium Fat, lb.	60	45	55	45	75	50	40	55	50	42	50	47
53.2	18.34	Chickens, Broilers, lb.	45	90	42	.....	50	.....	50	38	70	.....	75	.....
24.6	6.83	Salt Cod, lb.	25	22½	12	25	27½	24	.....	24	18	22	25	31
23.5	2.35	Salt Mackerel, lb.	20	22	15	30	27½	25	12	30	25	28	25	25
28.3	6.29	Halibut, lb.	35	32½	28	30	30	.....	.....	30	25	30	30	30
29.1	4.55	Salmon, Fresh, lb.	32	32½	30	32	35	40	18	35	35	30
28.2	4.27	Salmon, Cnd., No. 1, Tall, 1 lb.	30	27	27	30	20	28	30	30	30	30	33

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Minneapolis, Minn.	St. Paul, Minn.	Des Moines, Iowa	Fargo, N. D.	Sioux Falls, S. D.	Topeka, Kans.	Washington, D. C.	Lynchburg, Va.	Raleigh, N. C.	Columbia, S. C.	Louisville, Ky.	Memphis, Tenn.	Nashville, Tenn.	Little Rock, Ark.	New Orleans, La.	Helena, Mont.	Reno, Nev.	Seattle, Wash.	Portland, Ore.	Los Angeles, Cal.	San Francisco, Cal.
85	240	300	290	310	296	318	320	350	165	328	308	330	325	367	290	285	285	275	295	295
50	130	175	170	200	159	135	200	180	165	180	162	160	105	180	190	210	160	170	173	255
65	60	75	65	70	60	.....	100	90	70	75	.....	70	.....	105	75	70	65	60	64	75
11	.....	12½	13	12	9	.....	12	15	13	7½	9	7½	11	12½	12½	12½	10	11	10	12½
32½	.....	40	40	40	34	30	50	.....	30	35	.....	40	35	30	40	45	.....	40	40	40
7	.....	7	8	7	5½	5½	6	.....	6	6	5	5	6	6	8½	8½	7	8	7	7½
8	.....	8	9	8	10	5	10	9	.....	7½	.....	11	8	8	9	10	8	7½	8	9½
8	.....	8	8	8	.....	7½	10	10	10	8	.....	10	9	7½	9½	12½	8	8	10	10
8	8	8	8½	8	.....	7	12	10	.....	8	11	7	9	7½	9½	10	8	8	9	8
12½	.....	12½	13	13	13	11½	12	.....	11	12	7½	.....	12	12½	17½	12½	12	11	10	10½
.....	.....	.....	10	9	.....	.....	10	10	10	.....	13	12	15	12½	11	11½	12	12½	13	10
10	10	8	10	9½	.....	8	10	9	6	7	11	7	12½	5	9	9	10	8	11	10
8	.....	.....	15	15	.....	12	15	.....	15	13	.....	12	12	12	15	.....	.....	.....	.....	15
10	.....	.....	10	10	.....	.....	12	.....	.....	10	9	9	10	12	.....	.....	.....	.....	.....	.....
12	12½	.....	15	15	12	11	15	15	15	12	11	10	12	12	15	15	13	15	13	15
15	12½	12½	15	13	12½	10	15	12½	12½	12½	10	10	12	12	12½	15	13	12½	13	15
10	10	10	10	10	15	6	10	15	15	10	.....	12	15	10	12½	13	12	12½	10	15
8	9	10	10	10	10	7	10	10	10	9½	10	10	9	10	12½	10	11	11	12	10
22	.....	23	15	22	20	18	25	25	20	.....	.....	25	20	22	25	20	25	20	19	25
22	.....	23	15	22	20	18	25	25	20	.....	.....	20	25	22	22½	20	25	23	19	25
12½	.....	.....	13	15	9	10	15	15	15	12½	14	.....	12½	12	12½	12½	10	7	11	12½
10	9	10	9½	10	9¼	8½	9¼	9½	9	9	8½	8½	9	8½	9½	9	8¼	8⅓	8⅓	9
80	80	90	90	90	85	79	90	90	.....	90	62	65	70	90	100	85	95	100	87	95
.....	30	23	30	25	25	.....	25	25	25	.....	.....	30	25	30	29	25	.....	30	30	25
25	25	.....	50	50	25	25	40	50	.....	30	.....	28	35	30	30	45	25	28	23	40
38	38	38	35	32	33	42	40	45	45	35	32	32	33	31	45	49	50	44	44	45
9	9	14	12	10	10	14	14	20	17	14	15	12	20	7	12½	10	12	12	13	12
32	30	30	35	35	30	28	35	35	35	40	29	28	34	32	35	35	30	30	27	30
50	.....	50	50	53	55	48	50	63	65	60	49	40	48	50	60	60	55	50	62	60
48	49	50	47	45	47	50	55	60	55	50	46	50	48	49	47½	55	50	50	50	52½
30	32½	35	32	33	32	30	35	35	33	32	28	32	34	.....	38	35	33	35	29	33
29	31½	35	33	35	32	28	35	45	40	30	37	30	31	30	37½	40	38	35	35	35
32	.....	33	33	30	35	22	35	45	38	35	.....	30	35	35	35	45	40	35	33	35
160	125	.....	150	140	150	120	200	.....	200	190	164	200	.....	150	137½	195	175	.....	170	175
80	75	60	.....	.....	83	70	.....	85	85	60	85	.....	64	60	90	60	65	85	.....	50
80	75	75	65	65	.....	.....	75	.....	.....	65	60	.....	75	65	75	79	65	75	.....	75
.....	.....	.....	.....	.....	70	.....	.....	.....	85	75	.....	.....	75	65	.....	.....	.....	.....	.....	75
25	.....	25	30	25	25	20	35	35	.....	35	.....	25	25	25	30	30	25	25	25	25
.....	18½	.....	18	.....	.....	30	15	20	20	.....	16	.....	15	18	17½	17	18	17	20	20
18	23½	15	18	18	15	15	16½	20	20	15	12	12½	15	15	16	17	15	12½	15	15
25	22½	20	30	28	30	17½	30	25	25	25	24	27	22	20	20	25	25	23	18	25
25	25	30	35	28	30	25	35	25	25	35	20	27	25	20	30	25	30	20	22	25
12½	.....	15	15	15	15	14	15	20	18	15	.....	12	15	12	15	14	13	12½	13	15
15	15	12½	18	18	19	13	15	20	16	18	.....	12	14	13	15	12	15	11	14	17
1½	1½	2⅓	1¼	1¼	2	3	2	4	4	3¼	2	2	2	1¼	1	1	1½	1¼	2	2½
.....	.....	.....	.....	.....	.....	.....	.....	4	.....	10	.....	.....	.....	5	.....	10	.....	.....	8	.....
8	4½	6	5	5	5	4	5	.....	7	5	5	3	5	2	6	1	3	3	2	2½
18	17½	20	20	18	17½	15	18	.....	20	18	20	14	17	16	17½	17	17	12½	16	17
15	15	15	18	18	14	17½	20	12½	25	20	12	.....	18	15	15	14	15	16	12½	15
18	17½	12½	18	18	14	18	15	20	20	20	11	12	15	13	12½	14	15	14	14	15
15	16	12½	15	15	15	17½	28	25	25	15	15	12½	15	15	15	14	12	12½	12	15
15	.....	15	13	15	20	13	30	.....	.....	15	.....	15	.....	15	15	14	12	12½	12	15
25	.....	.....	30	20	.....	.....	.....	10	.....	25	22	20	20	12½	25	30	25	25	23	20
18	18	18	18	20	20	19	15	20	20	20	15	14	16	18½	15	18	13	15	.....	15
5	.....	6	8½	7	4	4	5	5	6	4	2	3	6	1	5	4	6	7	3	2
.....	.....	5	.....	.....	.....	.....	5	10	.....	.....	2½	5	5	3	.....	2	5	6	.....	1½
3	.....	5	5	.....	.....	.....	5	5	.....	3	2½	4	5	3	.....	2	5	7½	.....	1½
40	40	40	40	28	40	55	35	35	40	40	30	40	40	31	35	32	33	30	30	27½
35	35	35	38	25	35	50	40	40	45	40	.....	35	35	31	35	40	40	25	45	30
35	33	35	33	30	.....	40	40	40	32	.....	45	28½	40	38	45	40	45	40	32	32
37	35	45	40	35	50	40	45	45	35	45	30	40	35	38	36½	40	38	35	45	35
35	33	35	33	30	32	45	35	40	40	35	46	50	50	40	60	50	50	50	55	50
50	50	45	45	40	45	48	45	50	65	45	50	22½	45	55	.....	60	50	50	48	60
33	.....	50	.....	35	50	80	50	60	50	100	50	22½	45	20	20	.....	15	20	23	20
.....	27	30	20	30	35	20	28	25	30	33	25	20	35	15	15	.....	15	40	19	25
.....	20	30	30	25	25	20	25	25	.....	27½	18	10	35	15	23	30	20	22	17½	25
30	30	35	30	30	30	30	.....	.....	.....	25	24	25	30	20	27	30	25	23	25	20
30	30	35	35	30	.....	.....	.....	30	.....	25	24	25	30	20	27	30	25	23	25	20
.....	25	30	35	35	27	17½	30	40	30	30	30	17	27	23	25	30	30	25	19	30

Maple Sugar Production Brings German Rumors.

The German grapevine telegraph began sending out rumors with the beginning of the maple sugar season in Ohio and the northeastern states, stories springing up all through the state that maple-sugar makers must be licensed, and that the Government was going to confiscate their product. Of course, no producer of maple sugar requires a license, or is supervised in any way by the Food Administration, and the Ohio Federal Food Administration met this rumor by issuing a statement, also offering to furnish helpers to farmers who were reported to be unable to tap maple trees because of scarcity of labor.

Winfield, Kans., Knows How.

The city council of Winfield, Kans., has passed an ordinance making it a misdemeanor punishable by a fine of \$50 to disregard Food Administration regulations for meatless and wheatless days. Hoarding is also included in this law, with a \$50 fine for persons hoarding sugar, flour, or meats. The law covers homes as well as public eating places. On Mondays and Wednesdays no wheat bread can be served in any home or eating place. The sale of beef, pork, and mutton, excepting liver, is forbidden on Tuesdays, and none of these meats can be served on Tuesdays.

Mexican Banana Products.

Mexico is experimenting with banana products, according to the United States consulate in Mexico City, and by simple but improved processes is making banana flour, starch, vinegar, alcohol, fibers, paper, and cardboard. Bananas thrive in the states of Vera Cruz and Tobasco, and these processes require but small capital. The Mexican department of commerce and industries has devised a machine for peeling and cutting the bananas, which is made entirely of wood, thereby preventing the decomposition of the fruit that follows contact with metal.

St. Louis Measure Ordinance.

An amendment to the city ordinance now in force to make the measurements of bushel boxes conform with the government standard measures on like packages was introduced before the St. Louis Board of Aldermen. City Inspector of Weights and Measures Weeke requested the introduction of the amendment. There is a little difference between the city and government specifications and it is intended to make the city ordinance conform with the government regulations. Under the new ordinance bushel boxes are required to contain 2,150½ cubic inches and must be 22 inches long, 8½ inches deep and 11½ inches wide.

Texas Ice Cream Ordinance.

With the section prohibiting the sale of ice cream from wagons stricken out, the ordinance regulating the manufacture and sale of ice cream in Fort Worth, Tex., has been passed by the city commission and becomes effective following publication.

Under the terms of the new law, ice cream is defined as a frozen product made from milk, cream, eggs and sugar, with or without natural flavoring and containing not less than 8 per cent milk fat and not more than 7/10 of 1 per cent of pure gelatine, gum tragacanth or other vegetable gums.

The ordinance as originally drafted called for 12

per cent milk fat instead of 8 per cent. Milk fat requirements for fruit and nut ice cream were changed from 10 per cent to 6 per cent.

A license fee of \$5 a year is provided for the manufacturers of ice cream.

Refrigeration for Ripening Fruit.

As paradoxical as it appears, in several cases recently we have seen refrigeration used to force the ripening of bananas, says the *Fruit Dispatch*.

The bananas in insulated rooms were subjected to high temperature for a few hours, say 78 degrees for eight or ten hours; then the heat was turned off and after a short time cold air turned in, gradually cooling the rooms to a settled temperature of 60 to 62 degrees.

Checking the heat in the skin while the interior pulp is still warm and undergoing the ripening process appears to bring quickly a golden color, and the low temperature renders the fruit firm, even if there has been a tendency to soften it by excessive heat.

Condensed Canned Vegetables.

There is a marked difference between American and European methods of packing canned vegetables. European canned vegetables are packed in a more condensed form than ours, with a smaller percentage of water, and are sometimes dehydrated or evaporated before canning, being put into tin chiefly for protection in storage and shipping. A packing plant in British Columbia has adopted the European plan for a canned soup mixture in which six vegetables—carrots, turnips, potatoes, onions, peas and beans—are evaporated separately, each with a different degree of heat, and then put into tins containing 15 pounds in proportion of 3 pounds carrots, 2½ of turnips, 2½ of potatoes, 1 pound of onions, 3 pounds of peas, and 3 pounds of beans. This mixture is packed for Canadian army rations.

Canning Corn Without Sugar.

A can of corn is an extremely variable commodity. Chemical examination by the University of North Dakota of nearly 100 cans of corn bought in the open market showed that the amount of salt used in canning might vary from a quarter to three-quarters of 1 per cent, and that the sugar varies from 1 per cent to nearly 5 per cent. This variation in sugar is due to changes in the sugar content of the corn itself as it comes to the cannery through the season. As sweet corn ripens, its sugar turns to starch, and in making a uniform product the canner should be governed by chemical tests from day to day, increasing added sugar as the season advances. Fancy corn can often be packed without added sugar, thus effecting important sugar savings in canneries. Sweet corn harvested in northern states after September 1, when nights are cold, comes to the cannery sweet and tender, with maximum sugar content, but when canned is apt to be curdled, separated and disappointing. One-half of 1 per cent of starch added to such corn has been found a remedy, and efforts are now being made to secure sanction for such a pack under the food law.

A Canner's Car Saving.

When his shipping season approached last fall, a canner of Hoopeston, Ill., began to study ways of saving freight space on his shipments. A great many cars of canned goods are shipped throughout the Middle West on a basis of 35,000 to 45,000 pounds, whereas the average freight car will carry 60,000 to 100,000 pounds, with an overload capacity of 10 per cent. To group his orders so that two or three shipments might be combined in one car for customers in adjacent territory, he laid out a railroad map and stuck a pin in each point where goods were to be shipped. With this graphic layout, he says in *The Canner*, that after several days' study, he was able to get over 60 heavily loaded cars containing two orders, and in a couple of cases loaded three minimum cars orders of 35,000 pounds each in large automobile cars. The local railway agent assisted in this work, and it resulted in saving be-

tween 30 and 40 cars. In loading, goods for the last customer on the route were spread over the floor of the car and covered with a couple of strips of building paper, then the next to the last shipment, and so on, thus making it possible for the first customer to remove his goods and forward the car to the next consignee.

A War-Bonus Canning Contract.

A war-bonus system of prices for canning vegetables has been devised by a large cannery in New York State. Contracts are being made direct with growers in the neighborhood of the factory—first with the idea of eliminating transportation as much as possible by growing and canning crops in the neighborhood; second, with the idea that increased costs of growing and canning crops and labor shortage, with other factors, warrant the payment by canners of prices decidedly above normal, but that these high prices should be put on a war-bonus basis to facilitate a return to normal with the return of peace. This cannery is contracting for corn, peas, beans, and tomatoes, and furnishes high-quality seed and seedling plants at cost or less to growers. Terms were printed in full recently in *The Canner*.

Bakers' Service Board Established.

The headquarters of the National Bakers' Service Board, organized to assist bakers throughout the country to comply with the regulations of the Food Administration, has been established in Washington. Win M. Campbell, who operates a chain of bakeries in the Middle West, is chairman of the board and will direct its activities in connection with the Food Administration. The board has organized branches in nearly every state. Its chief function will be to conduct a co-operative recipe exchange through which bakers may use the experience of one another in making breads and cakes with the use of wheat substitutes. The board will also help in clarifying and explaining the Food Administration rules and will assist in keeping records required by the Food Administration.

Wheatless Pie Flour.

Wheatless Wednesday has brought a pie problem to hotels and restaurants, for, while substitute cereals can be used for bread and rolls, many cooks have found it difficult to make pie crust without wheat flour. The Hotel Sherman, Chicago, after many experiments has evolved the following formula for a wheatless pie flour: eight pounds cornstarch, 8 pounds corn flour, 6 pounds rye flour, 12 ounces sugar, 4 ounces salt, 8 pounds butter, 4 pounds lard, 3 quarts water. Butter and lard may be replaced with a vegetable shortening. Some chefs have cut down the daily consumption of wheat for pastry by serving deep-dish and open-face pies. The deep-dish pie is made without a bottom crust, and the open-face pie without top crust.

American Sardines.

Our imports of sardines from France and other European countries have been almost entirely cut off by war, but the California sardine industry is developing so rapidly that the fish and game commissioner of that state estimates an output of 2,500,000 cases of California sardines in another year. The California sardine has suffered market handicaps due to lack of standardization of pack. This difficulty is now being overcome by co-operation among the packers, and better methods of handling the fish from the time they are taken out of the water until they go into the can are being developed. Cannerymen representing 90 per cent of the Maine sardine-canning industry in co-operation with the Food Administration have voluntarily agreed to reduce their price to \$5.60 a case of 100 cans for the one-fourth size in oil and for the three-fourths size in mustard, and \$6.10 a case of 100 key cans in the one-fourth size in oil. This will enable retailers to sell the keyless cans at three for 25 cents, and the grocery trade has lined up behind the Maine cannerymen to distribute both this and last year's pack at those prices.

From Brewery to Sugar Refinery.

The buildings and a great part of the machinery in a Tampa brewery are to be converted into a sugar refinery plant, establishing a cash market for sugar cane in that locality and encouraging the raising of cane. The project is being supervised by B. L. Hamner, industrial agent of the Seaboard Air Line. It has been found that changes in equipment can be easily made, and that sirup, raw sugar and granulated sugar may be made at the rate of 50 tons daily. This section of Florida does not at present grow sufficient cane to keep such a plant in operation, but while cane acreage is being developed supplies of raw sugar can be drawn from Cuba.

Hotel Conservation Wrinkles.

At the recent hotel exposition in New York City many practical suggestions for food saving were brought out by speakers. Some of the best were those of E. H. Nies, published in the *Hotel Gazette*.

Oysters and clams can be saved and their consumption increased by proper handling, opening none ahead of time, and utilizing the surplus in cooked dishes. A mechanical butter-server effects 30 per cent economies in butter consumption by eliminating broken pieces and delivering butter to the table soft enough to spread readily, so that guests use less—cold, hard butter is not only difficult to spread, but lacks flavor. Bread may be saved by making the butter of fine quality and serving it moist—poor dry bread must be "greased" to make it go down. There is opportunity to push relishes, such as anchovies, antipastos, olives, and the like, and these articles are nonperishable. Leaves, stalks, and roots of celery can be utilized in casserole dishes. Foolish pride in the matter of soups often prevents the use of canned soups, which might be employed with great economy and no sacrifice in quality. The use of fish may be extended by care in serving a wider range and absolutely fresh quality. Cheaper cuts of meat are palatable when served with sauces used by European cooks, who have had experience in countries where meat is expensive and such cuts must be made savory. There is much waste in paring to make things look pretty. Smaller amounts of meat can be used to give relish and flavor to larger and more filling portions of cereals, grains, and vegetables. Fats and butter can be saved by eliminating puff pastry, substituting Viennese and Hungarian pastry prepared with yeast, egg powder, milk powder, potato flour, and molasses. Much economy can be effected by combining animal fats with vegetable fats. Blended oils can be used for mayonnaise. Corn meal can be served in dainty forms, such as the Italian "polenta," and in griddle cakes made of cooked corn meal instead of raw corn meal. Even waffles and ice cream can be made of corn meal.

Artificial Cream.

Artificial cream made on somewhat the same lines as artificial butter has been developed by two Chicago chemists. Skimmed milk is the basis, with some sugar first dissolved in it, and the addition of lecithin, a substance obtained from the yolk of eggs, and also melted beef or butterfat. This combination is heated, whipped up to a uniform creamy mixture, and then pasteurized, cooled and stored until wanted.

Readjusting Delivery Service.

A pamphlet to assist retail merchants in adjusting their delivery service to war conditions has been issued by the Commercial Economy Board of the Council of National Defense, Washington, D. C., and may be had upon application. It is based on the experience of the several thousand stores which have gone to one regular delivery a day, eliminated special deliveries, restricted the return privilege, or organized co-operative delivery systems, in accordance with the board's recommendations. The experience of these stores is summarized to serve as a practical guide for others, particularly in meeting the labor problems that will arise from forthcoming drafts for the army.

One delivery a day, the board states, is now a rule in leading stores in at least twenty of the large cities of the United States, and in scores of smaller cities and towns, and as a result the delivery departments of the stores are operating with from 15 to more than 50 per cent fewer men than formerly.

The booklet gives in detail the experience of a number of stores of various kinds and sizes. In no case known to the board has any store, after making a thorough trial of the single delivery plan, returned to more than one delivery.

Co-operative delivery systems, which the board recommended for small and medium sized cities and towns and for the larger cities where practical, have brought about even larger savings, proportionally, than the one-delivery a day plan.

The pamphlet describes the organization and methods of a number of co-operative delivery systems now in successful operation.

Conserving Sugar, Glycerine and Alcohol in Medicines.

Dr. Franklin Martin, member of the advisory commission and chairman of the general medical board of the Council of National Defense, issued the following statement on May 2:

During the past several weeks there has been considerable discussion throughout medical and pharmaceutical circles relative to the conservation of alcohol, glycerin, and sugar as applied to medicinal products.

Government and other authorities interested, realizing that careful consideration should be given the subject, recently met and debated the advisability and necessity of conservation measures from the standpoint of medical needs. In view of the importance of alcohol, sugar and glycerine in the manufacture of pharmaceutical preparations and of the limited possibilities for the conservation of alcohol and sugar therein, it was deemed advisable to refrain at this time from recommending conservation of sugar and alcohol insofar as their use in pharmaceutical preparations are concerned.

The amount of glycerine used in medicine when compared to the available supply was found to be relatively large, and a committee was appointed to investigate formulae, manufacturing processes, etc., requiring glycerine and to submit plans for the curtailment of the quantity now used in case future developments should make it necessary to adopt conservation measures in relation to medicines.

Peanut Butter Facts.

Trade interest in peanut butter as a typically American substitute food leads *Simmons Spice Mill* to publish some interesting facts about this product. Twenty-five years ago peanut butter was unknown. It is claimed that the first effort to place it on the market was made in 1896, and then only as a health food. The real growth of the industry dates from 1904, when there were only a half dozen small-sized factories making it in the United States. Today hardly a northern city of any size but has one or more peanut butter factories, while the largest factory located in New York state has a capacity of 15 tons daily. There are many grades of of peanut butter, classed according to the grade of nuts used, the amount of oil they contain, and the method of manufacture. There is no secret about processes, and the product, contrary to popular notions, is made only from good peanuts without the addition of other ingredients than salt. High-grade peanut butter will retain its sweetness and flavor for many months in air-tight packages.

The Peanut to the Rescue.

The American peanut, which till recent years was held by those who consumed it at "five a bag" as a confection and a joke, has risen to the dignity of a food, and a first class food at that, taking a place in the pantry alongside of corn and wheat, according to a recent editorial in the *Minneapolis Journal*. In the cotton belt it has filled the empty cottonseed oil barrel, where the boll weevil has ravaged the fields, and incidentally has turned the cotton farmer from his destructive one crop system of tillage to a sane diversified program.

In Texas, where the boll weevil has done its worst, they have planted this year 600,000 acres of peanuts, or twice the acreage of last year. Georgia planted this year 420,000 acres as against 190,000 last year; and the entire South planted this year more than 2,000,000 acres, as against less than 1,250,000 last season.

The peanut produces not only food for man but grain

and forage for stock. Peanut hay is equal to clover and alfalfa as a forage; while hogs are fattened on the nuts which they harvest themselves, making as high as 400 pounds of meat to the acre.

As human food the roasted peanut is said to be an almost complete ration, while peanut oil is now one of the dependable sources for the vegetable oils that are compensating for the growing shortage of animal fats. Cottonseed oil has already become a favorite shortening in the American kitchen, and much of the so-called olive oil we use is squeezed from the peanut.

The peanut in this year of war is bringing up the fat reserves, and in no poor way either, for it furnishes a perfect substitute for lard. As butter the ground peanut is rapidly coming into popular favor and is driving a considerable amount of dairy butter off the American sandwich.

Thus the little peanut, humble though it be, has already braced up the lean pork barrel, has supported the waning butter jar, and has laid the lard firkin under a tribute of thanks, while not one jot abating its visible and welcome presence on the corner popcorn stand.

Where to Get Cereal Flours.

A 40-page list of licensed mills throughout the United States milling corn, corn starch, barley, oats and rice, as reported up to February 1, 1918, has been issued by the U. S. Food Administration, with a view to assisting wholesalers, retailers, bakers, and others in securing wheat-flour substitutes. Copies of this list may be obtained from the federal food administrators in each state or from the Food Administration, Washington, D. C. The names and addresses of mills, with capacity in bushels per 24 hours, are arranged in groups according to the character of substitute milled, with a state arrangement under each group. The Food Administration does not recommend products of any mills listed or assume responsibility for them. Bakers and merchants purchasing substitutes are advised to encourage home industry, shorten time of delivery, and reduce transportation cost and traffic by purchasing from the nearest mills with an available supply. The greater number of these mills are corn mills, 36 pages in the list being devoted to that substitute. Eleven corn starch mills are listed, 11 oat mills, 45 rice mills, and 87 barley mills, barley flour being milled at present in California, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, Texas, Utah, Washington, West Virginia, and Wisconsin—an interesting showing, when it is remembered that little barley flour was made in this country at all a year ago.

The Popular Canned Yam.

Six years ago canned yams or southern type sweet potatoes were practically unknown in Texas, according to J. W. Stone, who recently addressed the Southern Sweet Potato Canners, not more than 2,500 cases being sold in that state. Texas now takes fully 100,000 cases and some grocery houses have increased their sales 1,000 per cent. This increase is due to better packing methods, and popular education in the use of a new and delicious prepared food article, and is taken as an indication of what may be accomplished by extending distribution of canned yams to northern states. This development of canned yams is going hand in hand with improvements in methods for keeping the raw potatoes by means of artificial drying in northern sweet potato storage houses throughout the South. The canners see no danger of competition between the canned article and the well-cured raw potato, because canned foods are a necessity to consumers in industrial centers, and the two different forms of yam really appeal to two separate and distinct classes of consumers.

The Slaughter of Roving Live Stock.

Figures compiled for the Missouri Pacific Railroad show that on 15 roads in Missouri, Arkansas, and Louisiana the past five years there were killed 121,596 head of live stock, comprising 10,236 horses and mules, 41,536 cattle, 62,561 hogs, 4,526 sheep and goats, and 2,729 other food animals. At current market prices these animals were worth \$7,800,000, and the slaughter works out at two head per mile per year. This waste of food and draft animals is due almost entirely to lack of adequate fencing on farms, and can be remedied by better attention of owners as well as by stricter laws in towns and villages prohibiting the running of animals at large.

Sugar Allotments 80 Per Cent of Last Year's Needs.

The following is a summary of the U. S. Food Administration's regulations governing the sale of sugar to manufacturers:

1. Effective May 15, 1918. All manufacturers of confectionery, candies, chocolate, chocolate products, cocoa, soft drinks, beverage syrups, fruit syrups, flavoring extracts, sweet pickles, chewing gum, soda water, invert sugar, wine, breakfast cereals, condiments, bottlers of soft drinks, soda water fountains and sellers of soft drinks, and all other manufacturers of less-essential food products, are to be rationed as to their sugar usage as follows:

2. All manufacturers are to be rationed except:

(a) Hotels, restaurants, boarding houses and public eating places, whose manufactured products are sold for consumption on the premises;

(b) Bakers and cracker manufacturers engaged exclusively in manufacturing baking products.

3. No refiner, manufacturer, wholesaler or retailer shall ship or deliver sugar to any firm or individual engaged in the business of manufacturing, bottling, baking and preparing products in which sugar is used, except on the receipt or delivery by such manufacturer of a sugar certificate or certificates issued by the Food Administrator of the State where such manufacturer is located.

4. Manufacturers who are dealers in sugar shall not ship or deliver sugar to any firm or individual except on the receipt or delivery of a sugar certificate or certificates of the amount equivalent to the amount of sugar shipped or delivered.

5. Manufacturers who are licensed dealers in sugar will not be required to procure sugar certificates for purchasing sugar to be resold by them as dealers in sugar, but they must secure sugar certificates for sugar to be used for manufacturing purposes.

6. The State Food Administrators will issue sugar certificates to manufacturers entitled to receive the same, in the following denominations:

50 pounds,
100 pounds,
500 pounds,
1,000 pounds,
5,000 pounds,
10,000 pounds,
60,000 pounds.

7. Manufacturers may have sugar certificates issued to them in whatever denominations best suit their requirements, according to the balance due them.

8. Each manufacturer must file a sworn statement with the Food Administrator of the State in which such manufacturer is located, giving the following information:

(a) Sugar used first six months 1917.

(b) Sugar used; sugar on hand; sugar on order; and sugar in transit, to date of making out statement.

(c) Sugar used last six months 1916.

Manufacturers can obtain the forms for these statements from the State Food Administrators.

9. Where a firm has several manufacturing plants located in various States, separate statements must be filed for each plant, with the Food Administrator of the State where the plant is located.

10. Manufacturers may use during the first six months of 1918, 80 per cent of the total quantity of all kinds of sugar used during the first six months of 1917.

11. The State Food Administrators will issue

sugar certificates only to manufacturers who have a credit sugar balance due them. Stocks on hand in excess of amount that manufacturers are entitled to use must be held subject to instructions from the United States Food Administration.

Manufacturers who have used more sugar than they are entitled to use, shall be reported to the United States Food Administration, Washington, D. C.

12. The State Food Administrators will issue sugar certificates for the entire balance due any manufacturer, and such manufacturer shall have the right to order the entire balance due him.

13. Manufacturers must endorse the sugar certificates before mailing or delivering them to the refiners, wholesalers, distributors, brokers or sellers of sugar.

14. Questions relative to new manufacturers starting in business during the period from July 1, 1917, to April 1, 1918, and questions relative to firms who have increased their capacity during that period, must be referred to the Food Administrator of the State where such firms are located.

The State Food Administrators have been given detailed instructions as to what action shall be taken in such cases.

15. New manufacturers who started in business after April 1, 1918 shall not receive any sugar certificates.

16. All questions relative to enforcement of these Regulations should be referred to the State Food Administrators, and not to the United States Food Administration, Washington, D. C.

Substitutes for Sugar.

The present high price of sugar and the difficulty of obtaining supplies serves to emphasize the surpassing importance of sugar in our dietary. The New York Department of Health, besieged by inquiries as to practical economical and obtainable substitutes for sugar, recently issued a statement regarding substitutes. Many persons, according to the department, apparently know of sugar only as a sweetening agent, forgetting entirely the fact that sugar is a most concentrated fuel food and one which is very readily utilized by the body.

Regarded merely as a food, sugar belongs in the class of foods generally spoken of as carbohydrates. Other common foods in this group are starch, flour, potatoes, rice, cereals, etc. It is well to note that even at its present high price sugar is one of the cheapest of this class of foods. To prove this, says the Department, we have only to compare the food value, as expressed in calories, which the various common carbohydrate foods furnish. Thus—

	Calories for 1 ct.
Corn starch at 10 cents a pound furnishes.....	160
Rice at 11 cents a pound furnishes.....	145
Molasses at 25 cents a quart furnishes.....	107
Potatoes at 3 cents a pound furnish.....	100
Dried raisins at 15 cents a pound furnish.....	95
Dried apples at 15 cents a pound furnish.....	90
Prunes at 16 cents a pound furnish.....	80
Canned corn at 21 cents a can furnishes.....	25
Sugar at 10 cents a pound furnishes.....	180
Sugar at 11 cents a pound furnishes.....	165
Sugar at 12 cents a pound furnishes.....	150
Sugar at 13 cents a pound furnishes.....	140
Sugar at 14 cents a pound furnishes.....	130
Sugar at 15 cents a pound furnishes.....	120
Sugar at 20 cents a pound furnishes.....	90

To a considerable degree fat can also be substituted for sugar as a fuel food. While the cost of the fats, as a class, is apparently high, per pound, the food value expressed in calories is also high, so that they

really constitute an economical source of fuel food. Thus—

Cottolene at 30 cents a pound furnishes about 130 calories for 1 cent.

Salad Oil (cottonseed oil) at 35 cents a pint furnishes about 200 calories for 1 cent.

Oleomargarine at 30 cents a pound furnishes about 115 calories for 1 cent.

From the standpoint of household economy, therefore, substitutes for sugar as a fuel food will be in order whenever the price of sugar is such that the number of calories supplied for one cent is less than the number obtainable in other foods. While this point has not yet been reached, it may be well for housewives to familiarize themselves with the above table of relative food values, to the end that agreeable variations may be made in the diet by the judicious use of these valuable fuel foods.

So far as the use of sugar as a sweetening agent is concerned, it is important to warn against the use of saccharin as a substitute for sugar. Saccharin is a coal tar derivative possessing no food value whatsoever. Moreover, the continued use of saccharin has been known to interfere with digestion. Even in France, at the present time, where the supply of sugar is very much restricted, regulations have been adopted to prevent the use of saccharin in preserves, jellies, marmalades, stewed fruits, cakes and pastry, cocoa, chocolate, condensed milk and household drinks. In that country saccharin may be used only in certain articles like wines, cider, lemonade, etc., which do not constitute an essential part of the diet. In no case should saccharin be used in the food of children, invalids, or the aged and infirm.

In New York City the Sanitary Code forbids the use of saccharin in foods or drinks sold in the city. This section of the code was attacked in the courts, but the attitude of the Department of Health was sustained.

Italian Substitute for Sugar Obtained from Grapes.

The deficiency of sugar in the Turine district has created an incentive for studying the question of substitutes, and the Italian Government has caused to be manufactured a type of loaf sugar combined with saccharine.

The question of obtaining sweetening substances from plants and fruits has naturally been studied by scientists, and at the Royal Experimental Station in Asti (Province of Alessandria) a new product called "Honey of Grapes," has been produced by a special process and patented apparatus, discovered by a Prof. Monti.

By means of this process a grape sugar resembling honey is secured through evaporation. It has a great advantage over other sugar substances in that it contains no water and therefore does not change in quality even if conserved for a long period.

In obtaining honey of grapes great care must be taken at the beginning of the operation to avoid fermentation of the grape juice; and in order that the evaporation of alcohol may be minimized and to further assist the process a certain quantity of sulphur anhydride is added. This latter, however, is eliminated eventually.

The grapes are pressed to separate the pulp and seeds from the juice, which latter is conveyed into a battery of eight tubs having double bottoms and heated by serpentine coils that keep the liquor at a steady temperature of from 95 to 104 degrees Fahrenheit, thus allowing constant evaporation. On passing the eighth tub, the liquor must be quickly cooled and placed in a refrigerating room.

The process which follows (apparatus of Prof. Monti) consists in freezing the grape liquor in a rotating cylinder (ammonia evaporation on the exterior), the water in the liquor becoming crystallized on the inner surface of the cylinder and the ice crystals automatically scraped off by fixed knives as the cylinder rotates. The concentrated liquor and the ice crystals fall into a box having a perforated bottom which permits the liquor to pass through and return to the cylinders for further concentration.

The passage of the concentrated liquor over the ice crystals removes the acid therefrom and this acid (tartaric) is found as a layer above the ice crystals.

The liquor must be further concentrated in order to obtain

a sirup of grapes, and this is done by means of heating in an apparatus under low pressure until the degree of density is 1,300. If honey of grapes is desired, further concentration must be effected until the point where crystals are formed.

At the Experimental Station at Asti only a small model of Prof. Monti's apparatus is employed, but notwithstanding a concentration of 55 per cent is obtained from grape liquor which at the beginning has only 16 per cent of sugar in solution.

The uses of this new product are varied, but mention should be made particularly of its adaptability in the preparation of preserved fruits and marmalades, as well as in the manufacture of flavoring fruit sirups for "nonalcoholic" beverages, which are so favored in Europe.

Sugar in Enemy Countries.

A remarkable statement of the social and economic conditions at the present time in Germany, Austria-Hungary, Bulgaria and Turkey is contained in a long manuscript report of the Bureau of Labor Statistics at Washington.

The report is composed mainly of extracts from actual newspapers printed in these countries. It is all information that was set down in the middle of, or at the end of, the last harvest, when conclusions could be drawn as to the conditions that would prevail at the present time. It took all of the fall and most of the winter to get enough of these enemy newspapers to the United States to form an adequate basis for a general survey.

In general, the report shows: that Turkey is actually starving because of the corruption of her own officials and the demands of Germany; that Germany and Austria are not starving, but are having a hard struggle to feed themselves; that Hungary is in better shape than either Germany or Austria; and that Bulgaria, so far as food is concerned, is suffering the least of all the countries covered in the report.

In several places in Germany there has been an attempt at compensation for reduced milk rations for children by increase of sugar allowance.

In its current report on the last vegetable crop of Germany the *Deutsche Tageszeitung* of Berlin says: "The reports on this year's vegetable crop are for the most part quite hopeless, and one need not wonder if prices remain high. In the south and west of Germany a favorable condition of things is generally reported; but in the chief producing districts in north, east and middle Germany the prospect is very unsatisfactory. Probably the worst reports are from Mecklenburg and Pomerania, where almost the majority of the cultivation contracts can be carried out only to a small extent. The drought has retarded not only the growth of the rather poor seed from last year, but has delayed excessively the planting of most kinds of cabbage. But the worst is the plague of vermin which cannot be overcome with the insufficient labor available. Various pests are rife and are ruining whole plots, especially in the southern part of the province of Saxony."

The fruit crop was mediocre, and in the case of apples and plums as bad as the vegetable crop. Restrictions were put on the fruit industry to assure a supply for the jam factories, as it was foreseen last summer that jam would have to go a long way this present winter as a substitute for fat for both the army and the civilian population.

Concerning the official estimates of what the beet sugar production for the year 1917 for the entire German Empire would be from the last beet crop, the *Schlesische Zeitung* of Breslau on September 28 said:

"On a cautious calculation the raw sugar crop should be 1,724,687 metric tons. This is about a million tons less than the crop of 1914-15, but an improvement over last year. Germany's sugar crop for the four years of the war has been: 1914-15, 2,599,514 tons; 1915-16, 1,499,728 tons; 1916-17, 1,509,007 tons; 1917-18, 1,720,152 tons.

To stimulate production, the price of sugar beets for the grower was raised to 32.7 cents per bushel of sixty pounds, to get this winter's supply of the finished product. But the results have fallen short because of lack of coal for the sugar factories. They could not all run at full capacity, so much of the beet crop went for fodder."

The report includes a table showing the average ration of sugar in nine representative German cities during August, 1917, to have ranged from 5.7 to 7 ounces per week.

Another table shows the following increases in sugar products during the period from August, 1914, to August, 1917.

			Per cent.
Jam, first quality.....	\$0.097	\$0.302	211
Artificial honey, in boxes.....	.076	.119	57
Artificial honey, loose.....	.076	.119	57
Sirup.....	.043	.076	75
Condensed milk, sweetened (can) .....	.131	.405	209

In Austria the food conditions are at their worst in the industrial districts on the northern borderland of Bohemia, and in Moravia and Silesia. The common pressure of hunger seems to have united Czech and German workmen against the food situation. The *Bohemia*, published at Prague, September 10, says that the workers demand an increase in the sugar ration for heavy workers of from 3.3 pounds to 4.4 pounds per month and for other workers of from 2.2 to 3.3 pounds.

A memorandum on food conditions in the city of Prague says: "Sugar supply unsatisfactory owing to the inefficiency of sugar office in Vienna and transport difficulties."

A system of public kitchens has been established at Vienna which assigns sugar at the rate of one-quarter kilogram per person monthly. Sugar is reported to have advanced 65 per cent in price from June, 1914, to June, 1917.

Sirup to Replace Sugar.

The sugar shortage has encouraged Louisiana sugar planters to broaden the use of pure cane sirup, which is made from cane juice without taking out any of its sugar. This juice is boiled to a point just below that required to crystallize it into sugar, and can be used not only for griddle cakes, sweet cakes, and candy-making, but is recommended by the planters as a sweetening for coffee and tea. It is practically sugar in a liquid form, and on a basis of 8 cents per pound retail for granulated sugar will yield economies of 40 to 50 per cent at a price of 4½ to 5 cents per pound for the sirup. The Louisiana planters believe that pure cane sirup has a wide range of usefulness in the household and in bakeries, candy factories, ice-cream plants, and similar establishments. They also recommend it as part of the army ration to be served with griddle cakes and bread.

It has been suggested that in southern sections where farmers make corn sirup they can conserve sugar by creating better local markets for the farm supply of sirup. In the past there has been considerable difficulty marketing corn sirup, because when each farmer makes a home supply and from a dozen to a hundred gallons or more surplus the product is unstandardized and therefore difficult to sell through ordinary grocery channels. It is one of the cheapest and most healthful sweeteners produced in this country and can be used for cooking and the table. Local markets for

corn sirup might be established by women's organizations in southern cities and towns, receiving supplies from farmers who wish to send it to them for sale and disposing of the sirup to housewives at a reasonable margin of profit. If arrangements of this sort were made sufficient publicity could be obtained in local newspapers to obtain both the supply from farmers and customers among the housewives.

Food Progress in Porto Rico.

The Porto Rican national dish is rice and beans, but until the war-garden campaign struck the island a year ago practically all "La Isla's" food crops were brought in from other places, most of the farming there being centered on sugar, coffee, tobacco and citrus fruit. But Porto Rico planted red and white beans, Spanish pigeon peas, corn, rice, sweet potatoes and other fruit crops, and her food harvest this fall is valued at \$4,000,000. The yield of beans has stopped all imports for the time being, and in the rush of harvest 2,000,000 pounds were exported. The corn crop has also stopped importations of that cereal, and upon this splendid start the Porto Rico Food Commission was the first board of its kind organized under government control in the United States, and has wrought decided benefits to the island by stabilizing prices of articles like rice and beans, developing the fish and milk resources of the island, which have been inadequate, and encouraging the growing of fresh and staple vegetable crops. Under the law establishing this commission it has the following powers:

1. It may purchase such articles of food as are necessary for the sustenance of the inhabitants of Porto Rico, preference to be given to articles of prime necessity such as fuel, beans, rice, flour, codfish, lard, pork, and condensed milk.

2. It may sell articles of food at reasonable prices to such merchants as bind themselves to retail them to the public at prices not to exceed those fixed by the Commission, under such rules and regulations as may be determined by the Commission.

3. It shall have power to create and operate establishments for the sale at retail of all or any articles of food, and employ such persons as may be necessary for that purpose.

4. It shall have the power to investigate the prices at which all articles of food are sold or purchased by private dealers, producers, and consumers, and for that purpose the books of all dealers and producers shall be open to their inspection, and if necessary the Commission may issue subpoenas for the attendance of witnesses or for the production of books or other documents, and shall have the power to take testimony under oath. All information obtained as the result of such investigations shall be confidential insofar as not inconsistent with the purposes for which it is obtained. Any person refusing to testify or to produce such books or documents shall be guilty of a misdemeanor.

5. It shall have the power to determine the prices at which all articles of food may be sold private parties, in which case a reasonable margin of profit shall be allowed, and shall have the power to determine the quantities which may be sold to any person or persons and the manner of checking such sales. Any person selling articles of food above the rate determined by the Commission, or in quantities or to persons prohibited by the Commission, shall be punished for each offense by a fine of not more than \$1,000 or imprisonment for not more than two months.

6. It shall have power to take over the stock of any or all dealers, producers or growers by paying them the reasonable value thereof.

7. It shall have power to provide for the transportation of, or to transport to Porto Rico, food, whether purchased by it or by private parties and by any means whatsoever.

8. In case of necessity it shall recommend to the Governor that he request the War Department of the United States to detail a navy transport or other vessel for the transportation of food to Porto Rico and may make whatever arrangements in regard thereto may be necessary.

9. It shall have power to take whatever measures it may deem necessary with regard to the planting and growing of food products for use during the period of the war and for such time thereafter as may be necessary.

Alabama Warns Handlers of Eggs and Feeds.

The following notice to egg buyers, merchants, hucksters, and others engaged in the production and handling of eggs was issued on April 8 under authority of Section 15 of the Alabama Food and Drug Act by the Commissioner of Agriculture and Industries of Alabama, with the advice of the Governor and the Attorney General.

1. That the Alabama Pure Food Laws forbid the sale, offer or exposure for sale, of adulterated food, and fix the penalty for each offense at a fine not to exceed five hundred dollars, or a sentence to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court.

2. (a) That paragraph seven, Section 4, provides that * * * "An article of food is adulterated * * * if it consists in whole or in part of a filthy * * * decomposed or putrid * * * animal substance." (b) That decomposed, putrid or rotten eggs are adulterated food.

3. That eggs being offered or exposed for sale, or having been sold to the consumer, shall be considered adulterated within the meaning of the Food and Drug Act of this state, if upon official examination, it is found that more than five per cent of the lot examined is unfit for food.

4. That on and after May 1, 1918: (a) eggs must not be sold "straight count," or "case count," but only on the "loss-off" basis; (b) eggs must not be sold to the consumer without first having been candled; (c) eggs must not be sold to merchants or produce dealers without first having been candled, and guaranteed as such, or sold with the distinct understanding that they be candled, and the seller receive pay for only good eggs.

5. (a) That by "candled" is meant that process whereby the content of the egg shall have been made visible by means of a transmitted light, and by which process any inedible eggs have been removed. (b) By inedible eggs, or eggs unfit for food, is meant those classed as "*black rots*," "*blood ringers*," "*spot rots*," "*moldy eggs*," "*mixed rots or addled eggs*."

6. That representatives of the State Department of Agriculture and Industries, the State Chemist, duly authorized municipal or county inspectors, and all police officers and sheriffs of the state are charged with the duties of inspection and analysis required for the proper enforcement of these provisions, under the Food and Drug Act.

The above ruling is promulgated by the State Department of Agriculture at the instigation of conclusive evidence that decomposed, putrid, rotten, inedible eggs are being promiscuously offered for sale in the markets of this state—a practice which is unjust to producers who sell their sound, fresh eggs at the same price paid for stale, decomposed eggs; unjust to the careful, honest, patriotic dealer who uses every precaution to keep eggs sound for consumption and who sells them in competition with the decomposed, filthy food of the careless, wasteful slacker, unjust to the consumers who have the inedible eggs thrust upon them only to be wasted, and a practice in violation of a state law.

Notice will follow of the dates and places in Alabama where experts of the federal Government will conduct candling demonstrations for the benefit of those who need instructions in candling.

To dealers in commercial feed stuffs in Alabama the

following notice has been sent by the Bureau of Foods, Drugs and Feeds of the State Department of Agriculture.

The laws of Alabama require the manufacturer or distributor to register, annually, each brand of feed with the State Department of Agriculture, Montgomery, Ala., and to offer the feed as registered, in bags of 50 pounds net, 100 pounds net, 150 pounds net or 200 pounds net, the weight of which is required to be printed on a definite tag affixed to each bag of feed. The guarantees of the feed, the name and address of the manufacturer or distributor must be printed on, and the copyrighted Alabama tax stamp must be affixed to the tag.

When a manufacturer or distributor fails to comply with the laws, each and every dealer who receives, sells, offers or exposes the feed for sale, fails to comply with the same laws, and is subject to the same penalties, under the laws, as the manufacturer or distributor; provided, that in case the State finds a brand of feed to be below the guarantee and the dealer who sold the feed is in possession of a written statement by the manufacturer that the feed is up to the standard registered with the State Department of Agriculture, and as guaranteed on the tags, no offense is committed by the dealer.

The State Department of Agriculture has discovered that several manufacturers and distributors over the country cannot be relied upon to comply with the laws, and they, together with the dealers who handle their feeds contrary to law, must be proceeded against as a protection to consumers and to the more painstaking, law-abiding manufacturers and dealers. The first offense, fixed by law, is a fine not to exceed \$500, and the second offense is a fine not less than \$500, with a labor sentence or imprisonment, at the discretion of the court.

Ten days from and after receipt of this notice, any dealer who is found to be selling or to have sold, exposed or offered for sale, a brand of feed contrary to law, as hereinafter set out, will be proceeded against in the manner prescribed by law.

I. When the bags of feed are not properly tagged as above set out.

II. When the tags, indicating the guarantees, do not bear the copyrighted one-cent Alabama tax stamp affixed to represent each 100-lb. bag of feed.

III. When the brand name of a feed, as printed on the tags, has not been duly registered with the State Department of Agriculture, Montgomery, Ala., for sale on the market of the state, since October 1st, prior to purchase of the feed.

IV. When the dealer is *not in possession of a written guarantee that the feed is as registered with the State Department of Agriculture, and as indicated on the tags*, furnished by the manufacturer or distributor responsible for the offer of the feed on the markets of this state, if the feed is found to be misbranded or adulterated.

Require the manufacturer, salesman or dealer to comply with the laws as above covered by paragraphs marked I, II, III, IV, before accepting feed for sale. This will protect you, save feed from being held for adjustment while in your possession, and should mark success for your business.

The term "dealer," as hereinabove used, represents the jobber, broker, merchant, or a firm, association, corporation or person offering, under a brand name,

a commercial feeding stuff, as defined in the Act approved March 9, 1911, and subsequently amended and approved September 29, 1915, for sale in this state; and the terms "manufacturer" and "distributor" are used, respectively, to represent the maker of a feed and the party or parties, other than the manufacturer, responsible to the dealers and consumers for the guarantees of a brand of feed.

N. D. Has Commercial Feedingstuffs Law.

The Legislative Assembly of the State of North Dakota recently passed an act to regulate the sale of concentrated commercial feedingstuffs. The law requires:

1. A printed statement giving the net weight, the name, brand or trademark, and the name and address of the manufacturer or importer.
2. A statement of the percentage of crude protein (Nx6.25), crude fat and crude fiber.
3. Licenses for the sale of "concentrated commercial feedingstuffs."
4. Fines for failure to comply with the law.
5. Fines for adulterating feeds.

The purpose of the law is: to protect the purchaser from adulterated, deleterious or inferior feeds; to protect the honest manufacturer or dealer against those who sell adulterated or inferior feeds; to give the purchaser an idea of the food value in terms of fat and protein.

The term concentrated commercial feedingstuffs includes linseed meals, cottonseed meals, cottonseed feeds, pea meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewers' grains, dried distillers' grains, malt sprouts, hominy feeds, cereline feeds, rice meals, dried beef refuse, oat feeds, corn and oat feeds, corn bran, ground beef or fish scraps, meat and bone meal, clover meals, condimental foods, poultry foods, stock foods, and all other materials of a similar nature.

Not included are hays, straw, whole seeds, or the unmixed meals made directly from the seed of wheat, rye, spelts, barley, oats, Indian corn, buckwheat, or broom corn, and wheat, rye, buckwheat, brans or middlings not mixed with other substances, or pure grains ground together.

Sale of Peanut Meals Containing Hulls Prohibited in Pennsylvania.

As a result of the request on the part of many manufacturers and jobbers to register and sell peanut oil meals in Pennsylvania, and because the law prohibits the presence of peanut hulls in mixed feeds sold in that state, an analysis of a number of standard samples of peanut oil meals in which peanut hulls were found present in varying amounts, was presented to Secretary of Agriculture Patton for his consideration. After going over the facts in the case, Secretary Patton asked the Pennsylvania Attorney General's department for an opinion as to whether or not peanut oil meals could be sold under the Pennsylvania Feeding Stuffs Act. The Attorney General's department in an opinion has ruled that peanut oil meals containing peanut hulls cannot be sold in the state.

American Public Health Association Meeting.

The next meeting of the American Public Health Association will take place in Chicago, October 14 to 17, 1918. The central theme of the meeting will be: "The Health of the Civil Population in War Time."

Commercial Stocks of Wheat, Wheat Flour, and Miscellaneous Wheat Food Products.

The total available supply of wheat, wheat flour, and miscellaneous wheat food products in the United States on January 1, 1918, was the equivalent of 351,000,000 bushels of wheat. Of this amount the equivalent of 196,000,000 bushels, or 56 per cent, represented the total stocks in commercial channels, while 155,000,000 bushels, or 44 per cent, represented stocks remaining on farms.

The 196,000,000 bushels in commercial channels consisted of 123,290,000 bushels of unmilled wheat, and of an amount equivalent to 72,710,000 bushels in the form of flour and miscellaneous wheat food products. Of the 123,290,000 bushels of unmilled wheat, 90 per cent, or 110,961,000 bushels, was actually reported, while the remaining 10 per cent of this amount has been arrived at by estimate.

The 351,000,000 bushels above mentioned constituted the entire wheat supply until the next harvest. The requirements for spring seed were approximately 25,000,000 bushels. The net exports of wheat and wheat flour during the three first months of the year amounted to 47,000,000 bushels. Allowing merely 28,000,000 bushels additional for export during April, May and June, there remained only about 250,000,000 bushels out of the total stocks on hand at the beginning of the year, which would be available for consumption. On the basis of the pre-war per capita rate of wheat consumption, namely, 5.3 bushels per annum, the entire supply would have been exhausted before July 1. This emphasizes the importance of the conservation program of the Government in relation to the use of wheat and wheat flour.—*Food Surveys, May 18, 1918.*

Tests That Point to Tin-Saving.

A long series of tests, made by a technical committee representing the National Canners' Association, to determine the relative value of different weights of tin coating on canned food containers, was recently completed with interesting results. The purpose was to determine whether extra-heavy tin coating of cans would overcome rusting and perforation with different foods during storage. Seven different weights of coating were tested, ranging from 0.90 pound per base box of tin to 3 pounds, and these containers were used for a wide range of products, including corn, tomatoes, peas, fish, milk, apples, and cider. The most significant fact established by the investigation was that none of the difficulties encountered in 12 experiments of food in plain cans was taken care of or eliminated by heavy tin coatings. These difficulties were perforation of cans in certain classes of food, unnecessarily large amounts of tin in contents of certain classes of foods, and discoloration of cans or contents with many classes of foods. Nor was the heaviest coating sufficient to prevent rusting under poor storage conditions, whereas with good storage conditions the slightest coating of tin was sufficient. The conclusions of this committee have a war-time significance—by further research into causes of defects in canned goods it will be possible to overcome them otherwise than by the use of heavy tin coatings on containers, which now seem to be no remedy for such troubles. By careful storage of canned goods it might be possible immediately to conserve tin through the use of lighter coatings on some types of container.

BOOK REVIEWS

WAR BREAD. By Alonzo Englebert Taylor, Professor of Physiological Chemistry, University of Pennsylvania. Member of the United States Food Administration and of the War Trade Board, Washington, D. C. The Macmillan Co., New York. 1918. 100 pp. 60c.

In the hope that it may aid his fellow citizens to support him, this book is dedicated to Herbert Hoover. The title is chosen advisedly; with us every problem in cereals ends in the question of bread. This book is most distinctly *not* a collection of recipes of war bread; on the contrary, it is a clear-headed exposition of the cereal problem throughout the world, the subject being handled from all points of view—strategic, dietetic, economic, political and sociological. Dr. Taylor is extremely well qualified to discuss any aspect of the food problem. Equipped in the science of nutrition by training and early experience as are but few Americans, he has been intimately associated with our food problem ever since it was a problem. His analysis of the prison fare in German concentration camps has been mentioned in these columns, as has been "The Food Supply," a book of which he was one of the two authors. In this small volume (it is of pocket size) is condensed what is practically an epitomization of all that is really worth while as to the part cereals play in the diet; the great need of our companions in arms is handled without gloves; our present and future supply is analyzed fearlessly; methods of "stretching" the world's wheat supply are discussed in the light of European experience along similar lines. Those whose views coincide with the oft-announced views of this magazine as to the desirability of legitimizing mixed flour, and as to the undesirability of trying to make extended use of high-extraction wheat flour, will appreciate many of Dr. Taylor's statements. The whole book is permeated with the insistent, although dignified, patriotism which characterizes all of Dr. Taylor's writings.

THE COST OF FOOD. By Ellen H. Richards, Late Instructor in Sanitary Chemistry, Massachusetts Institute of Technology, and John F. Norton, Ph. D., Assistant Professor of Chemistry and Sanitation, Massachusetts Institute of Technology. John Wiley and Sons, Inc., New York. 1917. 148 pp. \$1.

It is a courageous author who would write of the cost of food in these days of high prices. Perhaps it is an even more courageous publisher who would at this time send forth 5,000 copies of a book on that subject. As a matter of fact, in times of high prices it is all the more necessary for us to study intelligently the cost of living. It is also true that all of the published works of the late Mrs. Richards are of sufficient permanent value to render it well worth while to have this volume at one's elbow. This is the third edition of the original (1901) title. Dr. Norton, whose mother, Mrs. Alice P. Norton, the editor of the *Journal of Home Economics*, is favorably known to all dietitians, has revised the text thoroughly in the light of recently acquired knowledge, and the price data are correct up to April, 1917. Perhaps the most significant feature centers around Mrs. Richards' constant complaint of the apathy shown by the average individual when the subject of food is mentioned. That was quite true in pre-war days, but is by no means the case now. As Dr. Taylor puts it, "reactions of almost explosive violence" are now likely to

follow dietary changes which prove unpopular. There is, indeed, much difference between the days of plenty and these present days of restricted diets. As it will be many long years before the return of pre-war days of plenty, with their accompanying careless eating, a title on the cost of food by one as well recognized as an authority as was Mrs. Richards should find a ready sale among students of nutrition. Let's all drop in at the nearest book store and buy the 5,000 copies John Wiley and Sons were sufficiently courageous as to print.

STUDIES ON THE DIGESTIBILITY OF SOME NUT OILS, by A. D. Holmes, *Specialist in Charge of Digestion Experiments, Office of Home Economics*. Bulletin No. 630, States Relations Service, U. S. Department of Agriculture. Five cents.

This pamphlet, which was prepared under the direction of C. F. Langworthy, Chief, Office of Home Economics, records the results of a study of the digestibility of almond, black-walnut, Brazil-nut, butternut, English-walnut, hickory-nut and pecan oils.

CONCORD GRAPE JUICE: MANUFACTURE AND CHEMICAL COMPOSITION, by B. G. Hartmann, *Fermentation Chemist*, and L. M. Tolman, *Chief, Central Food and Drug Inspection District*. Bulletin No. 656, Bureau of Chemistry, U. S. Department of Agriculture. Five cents.

This bulletin concerns itself principally with the acid and sugar content of American grapes.

THE EFFECT OF ALKALI TREATMENT ON COCOAS, by Eugene Bloomberg, *formerly Assistant Chemist, Buffalo Food and Drug Inspection Station*. Bulletin No. 666, Bureau of Chemistry, U. S. Department of Agriculture. Five cents.

The author claims that statements to the effect that the alkali treatment increases the solubility of cocoa are without foundation, the most noticeable effect being that of color.

GRAIN-DUST EXPLOSIONS, by B. W. Dedrick, *Instructor in Milling Engineering*, and R. B. Fehr, *Assistant Professor of Mechanical Engineering, The Pennsylvania State College*, in collaboration with David J. Price, *Engineer in Charge, Grain Dust Explosion Investigations, Department of Agriculture*. Bulletin No. 681, Bureau of Chemistry, U. S. Department of Agriculture. Ten cents.

This is a record of the investigation recently conducted in the experimental attrition mill of the Pennsylvania State College, and furnishes much definite information as to the inflammability of carbonaceous dusts.

HOW TO CANDLE EGGS, by M. E. Pennington, *Chief, Food Research Laboratory*, M. K. Jenkins, *Assistant Bacteriologist* and H. M. P. Betts, *Artist*. Bulletin No. 565, Bureau of Chemistry, U. S. Department of Agriculture. Ten cents.

The title is self-explanatory and probably everyone interested in eggs knows of Mrs. Pennington's excellent work in that line.

Pamphlets on Food Subjects.

The Bacteriological and Chemical Study of Commercial Eggs in the Producing Districts of the Central West. Bulletin of the U. S. Department of Agriculture, No. 51. Written under the direction of M. E. Pennington, Chief, Food Research Laboratory, associated with M. K. Jenkins, E. Q. St. John and W. B. Hicks. 77 pages, 8 color plates. Price 40c.

The Cost of Producing Apples in the Wenatchee Valley, Washington. Bulletin of the U. S. Department

of Agriculture, No. 446. By G. H. Miller, Assistant Agriculturist, and S. M. Thomson, Scientific Assistant. 35 pages. Illustrated, 4 plates. Price 10c.

Separation and Identification of Food Coloring Substances. Bulletin of the U. S. Department of Agriculture No. 448. By W. E. Mathewson, Assistant Chemist. 56 pages. This bulletin will be of interest chiefly to chemists engaged in food analysis.

The Food Value and Uses of Poultry. U. S. Department of Agriculture Bulletin No. 467. By Helen W. Atwater, Scientific Assistant, Office of Home Economics. 29 pages. Will be useful to housekeepers, extension workers, teachers and students of home economics. Price 5c.

Potatoes, Sweet Potatoes, and Other Starchy Roots as Foods. U. S. Department of Agriculture Bulletin No. 468. By C. F. Langworthy, Chief, Office of Home Economics. 28 pages. Illustrated. Chiefly of interest to housekeepers and teachers of home economics. Price 5c.

Studies on the Digestibility of the Grain Sorghums. U. S. Department of Agriculture Bulletin No. 470. By C. F. Langworthy, Chief, and A. D. Holmes, Scientific Assistant, Office of Home Economics. 30 pages. Price 5c.

Eggs and Their Value as Food. U. S. Department of Agriculture Bulletin No. 471. By C. F. Langworthy, Chief, Office of Home Economics. 30 pages illustrated. Summarizes data regarding uses of eggs, and effect of handling, storing and marketing on the value of eggs in the household. Price 5c.

Apples: Production Estimates and Important Commercial Districts and Varieties. U. S. Department of Agriculture Bulletin No. 485. By H. P. Gould, Bureau of Plant Industry, and Frank Andrews, Bureau of Crop Estimates. 48 pages. Mainly a compilation of reports from correspondents familiar with fruit growing in states in which they live.

Turnips, Beets, and Other Succulent Roots, and Their Use as Food. U. S. Department of Agriculture Bulletin No. 503. By C. F. Langworthy, Chief, Office of Home Economics. 19 pages, illustrated. Price 5c.

Experiments in the Determination of the Digestibility of Millets. U. S. Department of Agriculture Bulletin No. 525. By C. F. Langworthy, Chief, and A. D. Holmes, Assistant, Office of Home Economics. 11 pages. Price 5c.

Bread and Bread Making in the Home. U. S. Department of Agriculture Farmers Bulletin No. 807. By Caroline L. Hunt, Scientific Assistant, Office of Home Economics, and Hannah L. Wessling, Assistant Chemist, Bureau of Chemistry. Specially prepared for housekeepers. 26 pages, illustrated.

The Small Vegetable Garden; Suggestions for Utilizing Limited Areas. U. S. Department of Agriculture Farmers Bulletin No. 818. 44 pages, illustrated.

How to Select Foods—I. What the Body Needs. U. S. Department of Agriculture Farmers Bulletin No. 808. By Caroline L. Hunt and Helen W. Atwater, Scientific Assistants, Office of Home Economics. 14 pages, illustrated.

Condition and Extent of the Natural Oyster Beds and Barren Bottoms in the Vicinity of Apalachicola, Fla. U. S. Bureau of Fisheries Document No. 841. By Ernest Danglade, Scientific Assistant. 68 pages, 7 plates, large map. Price 25c.

The Distribution of Fish and Fish Eggs During the Fiscal Year 1916. Bureau of Fisheries Document No.

837. By Henry O'Malley, Assistant in Charge of Fish Culture. 111 pages. Price 15c.

Physiological and Pharmacological Studies on Coal Tar Colors—I. Experiments with Fat Soluble Dyes. By William Salant and Robert Bengis, Pharmacological Laboratory, U. S. Bureau of Chemistry. Reprinted from the Journal of Biological Chemistry, Vol. XXVII, No. 2, November, 1916.

Vermont Food Administrator.

The appointment of Frank H. Brooks of St. Johnsbury, Vt., as Federal Food Administrator of that State has been approved by President Wilson. Mr. Brooks succeeds Mr. James Hartness, who resigned because of the stress of other matters. Mr. Brooks was formerly president of the E. & T. Fairbanks Scales Company of St. Johnsbury. He organized the Brooks-Taylor Dry Goods Company, of which he is a director, but is not actively engaged in any business, and will devote his attention exclusively to the work of the Food Administration. His headquarters will be at Montpelier.

Increased Production of Food Crops in Territories.

To make 2,000,000 people in Alaska, Hawaii, Porto Rico, and Guam less dependent upon the mainland of this country for their supplies of food was one of the war-emergency projects undertaken by the United States Department of Agriculture. Through its experiment stations in these territories important results already have been obtained.

Porto Rico, which formerly imported more than \$800,000 worth of beans annually from the mainland, now is in a position to export this product.

The Alaska stations have greatly increased their areas sown to grains and now are able to meet increased demands for seed grain locally adapted. The Guam station is distributing larger quantities of seeds and plants for cultivation by the natives with prospects of an increased production of food. Hawaii has materially increased its production of food crops.

That work to increase food supplies in the territories was urgently needed is evident from the fact that the annual imports of such products into Hawaii and Porto Rico alone amounted to some \$20,000,000 a year before the war. Many of the articles imported can be grown successfully in these islands. As a result of the emergency efforts of the Department of Agriculture's stations, imports of a number of food materials already have been noticeably reduced.

A representative of the department investigated the agricultural situation in the Virgin Islands recently and suggestions as to how the islands may become more nearly self-supporting have been made. The specialist detailed to this investigation had had an experience of more than 13 years in Porto Rico, where agricultural conditions are similar, and his suggestions should prove of value if put into practice in the new possessions. The only crops found cultivated to any extent were sugar cane and sea-island cotton, the yields of which are low compared with other West Indian islands. The representative found that there was an almost complete absence of fruit and vegetables on the markets, indicating very limited supplies of locally grown food materials. Stock growing is followed to some extent, but improved stock is needed, better forage plants should be introduced, and more attention is needed to the proper handling of stock, dairying, and other farm enterprises.

FOOD REVIEW

WHEATLESS BISCUIT, Manufactured by the National Biscuit Company, New York, N. Y.

A few days ago this office was formally notified by the National Biscuit Company that there was being sent the editor a collection of wheatless products, a gift designed to prove that the problem had been solved—that excellent biscuits, cakes, cookies and all the rest could be made from non-wheat flours. In due time the collection arrived. Sure enough, there were many of our old friends, headed by the inimitable Zu Zu. Quite the same as ever to the outward eye, and as satisfying as ever to the inner man. New acquaintances we made, too, to wit: Cornola, Mary Ann, Wheatless Cake, Peanut Cake, Oaten Cake, Luxury Biscuit and Atlantics. These wheatless products have one serious drawback, they disappear too rapidly. The collection sent for "editorial review" is now but a memory—although a pleasant one. An accompanying leaflet tells us that the well-established brands such as Nabisco, Uneeda, Tokens, Lotus, Fig Newtons, Social Tea Biscuits and Anola are all of them now made in accordance with U. S. Food Administration rulings. With the need for conservation of wheat flour as urgent as ever the present moment is none too soon to commence eating the alternative cereals in the form of "National," "Wheatless" or "Victory" crackers. That they are excellent is attested to by a discriminating commission consisting of Mr. and Mrs. Editor, Aileen, Gordon, Cara and, sitting as associate members, Phylla, Barbara and Billy.

To Preserve Vegetables by Fermentation.

The fermentation method widely used abroad in preserving string beans, beets, cabbage, cucumbers and other succulent garden crops, is described in a notice issued by the United States Department of Agriculture.

Sauerkraut and pickles put up in this way are fairly well known in this country, but comparatively few persons have thought of trying it as a household measure for preserving these and other vegetables. Those who like acid foods and who have too few canning containers to hold their surplus products may find this method useful. The following description of this method of fermenting vegetables is prepared by one of the bacteriologists in the Bureau of Chemistry who has been experimenting with this process.

The vegetables are not cooked but are put down in a salt brine in any non-metal water-tight container and are sealed up with paraffin and are otherwise made airtight. Under this treatment lactic acid will develop and this acid, the value of which as food has been recognized, acts as a preservative. Whether Americans will develop a taste for such fermented foods highly prized in Europe, is open to question, but the investigator believes that many will find the process well worth trying.

TO PRESERVE CUCUMBERS.

Wash the fruit if necessary and pack into a clean, water-tight barrel, keg, or crock. On the bottom of the barrel place a layer of dill weed and a handful of mixed spice. Add another layer of dill and another handful of spice when the barrel is half full and when almost full add a third layer. If a keg or crock is used, the amount of dill and spice can be reduced in proportion to the size of the receptacle. When the container has been filled within a few inches of the top, add a layer of covering material—beet tops or grape leaves—about an inch thick. If any spoilage should occur on the surface, this layer will protect the vegetables beneath. Press

down with a clean board weighted with bricks or stone. Do not use limestone or sandstone.

Make a brine by adding 1 pound of salt to 10 quarts of water. To each 10 quarts of brine so made add two-thirds of a quart of vinegar. The vinegar is used primarily to keep down the growth of injurious bacteria until the lactic acid ferment starts, but it also adds to the flavor. Add sufficient brine to cover the material and allow to stand 24 hours. Then make air-tight, as described below. The time necessary for complete fermentation to occur depends upon the temperature. In a warm place only five days to a week may be necessary; in a cool cellar three to four weeks.

BEETS AND STRING BEANS.

The strings should be removed from string beans before they are put up. Beets, of course, require careful washing to remove all dirt before brining. If it is desired, when finally the beets or string beans are to be eaten, to wash out the brine and serve them as fresh vegetables, the addition of spice when they are put up is not necessary. Proceed as with cucumbers.

MAKE THE CONTAINERS AIR-TIGHT.

There always will be more or less bubbling and foaming of the brine during the first stages of fermentation. After this ceases a thin film will appear which will spread rapidly over the whole surface and develop quickly into a heavy, folded membrane. This scum is a growth of yeast-like organisms which feed upon the acid formed by fermentation. If allowed to grow undisturbed it will eventually destroy all the acid and the fermented material will spoil. To prevent this scum from forming it is necessary to exclude the air from the surface of the brine. This should be done by either of two methods, 24 hours after the vegetables have been packed.

Perhaps the best method is to cover the surface—over the board and around the weight—with very hot, melted paraffin. If the paraffin is sufficiently hot to make the brine boil when poured upon it, the paraffin will form a smooth, even layer before hardening. Upon solidifying, it effects an airtight seal. Oils, such as cottonseed oil or the tasteless liquid petroleum, may also be used for this purpose. As a measure of safety with crocks, it is advisable to cover the top with a cloth soaked in melted paraffin. But the cover in place before the paraffin hardens.

The second method, which may be used with barrels or kegs, is to pack the container as full as possible and then replace the head. In using this method for fermentation of beets, cucumbers, or string beans, add the board and weights as described above and allow to stand for 24 hours before heading. During this period most of the gas first formed escapes and the container then may be headed up tight, first removing the board and weights. Then bore an inch in the head and fill the barrel with brine, allowing no air space. Allow bubbles to escape. Add more brine if possible, and plug the vent tight. If the barrel does not leak, fermented products put up in this manner will keep indefinitely.

After sealing with paraffin the containers should be set where they will not be disturbed until the contents are to be used. Any attempt to remove them from one place to another may break the paraffin seal and necessitate resealing. If the containers are not opened until cold winter weather, the vegetables should keep without spoilage until they are used up. If opened in warm weather they are likely to spoil quite rapidly unless the paraffin is reheated and the container resealed immediately. In the case of cucumbers and chayotes, it is preferable, if enough material is available, to use the method of packing in kegs or barrels as described above.

Only those vegetables which cannot be kept by storing or early ones that are not available later in the season, should be preserved. Late beets, for example, can be better kept in the cellar.

The method of putting up cabbage by fermentation has a number of advantages over the present process of making sauerkraut and will be described in a later article.

A circular describing the fermentation method is now available for distribution from the States Relation Service of the Department of Agriculture.

California Saves Walnut Culls.

The California walnut crop always includes a certain percentage of small nuts and culls, which were formerly put on the market at unprofitable prices and sometimes hurt the demand for larger nuts of good quality. The Growers' Market Association has built a cracking plant, where these culled nuts are shelled and the meats sold to grocers, bakers and candy manufacturers, turning the product to profitable use. It is estimated that this year's crop of cracked nuts will amount to 1,500,000 pounds of nut meat.

Canada Prohibits Wheat Middlings.

The Canadian Food Control Board has issued rulings which prohibit the manufacture of Cream of Wheat, farina and similar products, in the making of which there is an excessive waste of wheat parts. An exception is made in the case of manufacture for invalids and children and licenses will be issued for such manufacture when the proper application is made to the Food Control Board.

The Food Board has thought it best to place the ban on those products which use only part of the wheat berry and thus cause an excessive waste of wheat parts. It is still a probability that cereals made from wheat may be prohibited entirely. As it is, all wheat products are now substituting 25 per cent of other grains. The Shredded Wheat Company, in lieu of the substitution, is limited to 75 per cent of its 1917 output. It is impossible to introduce other grains into the company's process. But in the case of wheat middlings their manufacture is absolutely prohibited. This must not be mistaken for a specific ban against the advertised "Cream of Wheat." The package of the latter can still be sold, but there will be no further supplies when present stocks are exhausted.

The manufacturers of Ralston Wheat Food have changed their formula to include 25 per cent of "grains other than wheat." The name "Ralston's Wheat Food" is being retained and the Canadian makers of this product claim that the new formula is a blessing in disguise, for the addition of the other grains has improved the product and made it more popular with the public.

The "Read Test" Still Legal for Teas.

Relative to the recent Supreme Court decision in the Tea Case, Waite et al. vs. Macy et al., commonly spoken of as the "Read Test Case," the U. S. Treasury Department announced on May 21, 1918, that in examining teas for "purity" it will continue as heretofore to use as preliminary test, but not necessarily as final, the Read test, slightly modified for detecting impurities consisting of artificial color and facing matter in connection with the "cup test," double weight, for detecting other impurities (sediment, scum, etc.).

Regulations authorizing the continued use of the Read test, but in conformity with the Supreme Court decision, will soon be issued.

The changes contemplated in the regulations in comparing teas with the Government standards for "purity" will still admit of tea buyers in the Far East using the "Read test" and the "cup test" and deriving from their use the same protection against the rejection of their teas in the United States as they have enjoyed in the past. Tea buyers are advised to continue the use of these simple, practical tests for their own protection.

Fishy Flavors.

The fishy flavor observed sometimes in milk and frequently in butter has been the subject of a great deal of investigation, but its origin has remained obscure. The evidence has heretofore been against bacteria being the direct cause of the trouble, and has indicated that changes in the product favored by high acidity and the presence of oxygen were responsible for the objectionable flavor. O'Callaghan attributed the defect to *Oidium lactis*. Weigmann considered that fishiness might develop from abnormal working

and sometimes also from the use of salt high in magnesium. Several experiments have appeared to indicate that specimens of fishy butter would not communicate their flavor to good butter placed in contact with them. There has been conflicting evidence as to whether the flavor occurred in unsalted as well as salted butter. The latest contribution to this vexed question has recently been made by Mr. B. W. Hammer, dairy bacteriologist at the Iowa Agricultural Experiment Station. From a can of evaporated milk which had developed a fishy odor he isolated an organism that was capable of producing fishiness in milk, cream or evaporated milk into which it was inoculated. In milk so inoculated there was, besides the development of the fishy odor, a coagulation and a rapid digestion. The organism did not, however, produce fishiness when inoculated into butter, either directly or into pasteurized or sterilized cream before churning. The organism, which appears to be closely related to the *Proteus* group, has been named *Bacithyosmium*.—*Scientific American*.

Composition of Maple Products.

The Department of Agriculture recently issued a professional paper on maple sugar which is of interest to food chemists who may be called upon to examine maple products. It discusses characteristics and composition, methods of analysis, and the effect of locality where produced upon composition of the sugar, and gives definitions of maple sugar and sirup.

Maple sirup, the bulletin states, contains not more than 35 per cent water and weighs not less than 11 pounds to the gallon. Sucrose constitutes from 95 to 97.5 per cent of the dry substance of maple sugar and sirup. A copy of the publication may be obtained by writing to the department at Washington for Department Bulletin 466.

Cattle Feed Substitutes.

The shortage of cattle food in Holland is reported to be causing the preparation of various sorts of refuse as substitutes.

The reeds growing in profusion along watercourses are being worked into fodder, which is sold for 26 florins per 100 kilos (10.45 per 220 pounds).

Flax bolls, usually worth not more than 2.50 florins (\$1) per 100 kilos, are now prepared and sold as fodder for 27.50 florins per 100.

For dried potato peelings with a chemical addition, said to be really worth 2 or 3 florins per 100 kilos, the price asked is 40 florins per 100 (\$16.08 per 220 pounds).

The high prices demanded for these preparations and doubt as to their wholesome qualities caused a request for government intervention. It is proposed that all preparation of fodder be in the charge of scientific experts and that the Government fix a maximum price for its sale.

Wood Cellulose as a Cattle Feed.

On the authority of Mr. Norman L. Anderson, commercial agent, we learn that extensive experiments in Sweden have shown that wood cellulose is an excellent cattle feed, and the Swedish Government is pushing its manufacture as much as possible. On account of the difficulties of exportation Sweden has a supply of about 500,000 tons. The Agricultural Society has requested the Government to fix a maximum price for this feed of 22 crowns per 100 kilos (\$5.90 per 220 pounds), the same as for oats.

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FOOD INSPECTION DECISION 173.

Canned Vegetables, Canned Peas, and Canned Pea Grades.

The following definitions and standards for canned vegetables, canned peas, and canned pea grades were adopted by the Joint Committee on Definitions and Standards, April 25, 1917, and were approved by the Association of American Dairy, Food, and Drug Officials, August 3, 1917, and by the Association of Official Agricultural Chemists, November 21, 1917:

1. *Canned vegetables* are properly matured and prepared fresh vegetables, with or without the addition of potable water, salt and sugar, as specified in the separate definitions for the several kinds of canned vegetables, sterilized by heat, with or without previous cooking in vessels from which they take up no injurious substance, and kept in suitable, clean, hermetically sealed containers.

2. *Canned peas* are the canned vegetables prepared from the well developed but still tender seeds of the common or garden pea (*Pisum sativum*) by shelling, winnowing and thorough washing, with or without grading and with or without precooking (blanching), and by the addition, before sterilization, of the necessary amount of potable water, with or without sugar and salt.

CANNED PEA VARIETIES.

3. *Early peas* are peas of early maturing sorts having a smooth skin.

4. *Sugar peas, sweet peas*, are peas of later maturing varieties having a wrinkled skin and sweet flavor.

CANNED PEA GRADES.

5. *Fancy peas* are young, succulent peas of fairly uniform size and color, unless declared to be ungraded for size, with reasonably clear liquor, and free from flavor defects due to imperfect processing.

6. *Standard peas* are less succulent peas than the "fancy" grade, but green and of mellow consistency, of uniform size and color, unless declared to be ungraded for size, with reasonably clear liquor, though not necessarily free from sediment, and reasonably free from flavor defects due to imperfect processing.

7. *Sub-standard peas* are peas that are over-mature, though not fully ripened, or that lack in other respects the qualifications for the standard grade.

CANNED PEA SIZES.

No. 1 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 9/32-inch (7 mm.) mesh.

No. 2 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 10/32-inch (8 mm.) mesh.

No. 3 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 11/32-inch (8.7 mm.) mesh.

No. 4 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 12/32-inch (9.5 mm.) mesh.

No. 5 peas are peas which were, before precooking (blanching), small enough to pass through a screen of 13/32-inch (10.3 mm.) mesh.

No. 6 peas are peas not all of which were, before precooking (blanching), small enough to pass through a screen of 13/32-inch (10.3 mm.) mesh.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

D. F. HOUSTON, *Secretary of Agriculture*.
Washington, D. C., February 15, 1918.

Human Food Produced by Farm Animals from 100 Pounds of Digestible Matter Consumed.

ANIMAL.	EDIBLE SOLIDS PRODUCED.
Cow (milk)	18.0 pounds
Pig (dressed)	15.6 pounds
Calf (dressed)	8.1 pounds
Poultry (eggs)	5.1 pounds
Poultry (dressed)	4.2 pounds
Lamb (dressed)	3.2 pounds
Steer (dressed)	2.8 pounds
Sheep (dressed)	2.6 pounds

From the Iowa Dairy and Food Commissioner's Report for 1917.

Errors in Weight of Print Butter.

In order to assist butter manufacturers in complying with the federal Net Weight Law, the Department of Agriculture made a study in 400 butter-making establishments weighing some 13,000 packages of print butter to determine the causes of and methods of preventing the error in weight of butter sold in packages. The chief causes, which are discussed in detail in Circular 95, Office of the Secretary, were found to be: variations in the physical conditions of the butter, inaccuracies and incorrect methods of adjusting the printing machine, inaccurate scales, and carelessness of the operator.

The moisture and salt content of butter made under similar conditions vary from day to day, and are not uniformly distributed throughout the mass of butter even in the single day's churning, according to the circular. This lack of uniformity causes errors in prints which vary from .08 to .1 of an ounce per pound print, and although the variations from this cause are small they still contribute to the total error. The investigators found numerous cases of inaccuracy of scales, due to rust and dirt which had accumulated as a result of careless treatment, and which caused a variance of several hundredths of an ounce per pound. Many scales were out of balance also, which emphasized the necessity of frequent adjustment.

To secure accurate pound prints, the circular recommends the following method of machine adjustment: weigh at least 5 per cent of the prints made, weigh 5 to 10 packages together and check the weight four to five times at intervals during each churning, resetting the machine if necessary until proper weight is obtained. It is believed that with such a procedure the difference of the average weight from 16 ounces need not be more than .05 or .06 ounce if no other cause of error is present.

East Side Fish Dishes.

After looking into the subject of fish consumption, Arthur Williams, federal food administrator for New York City, has reached the conclusion that the foreign population of the lower East Side understands best the possibilities of fish as a substitute for meat. These new Americans eat more kinds of seafood than the rest of us and have organized distribution by pushcart, stall, and store. The Italians eat fried squid, an excellent food which was only used for bait in this country until they arrived. Tiny sand eels are fried in oil, making a savory dish. Mussels are steamed and served with a slightly acid sauce and are said to rival the clam in flavor. East Side markets sell large quantities of periwinkles, a little snail-like creature found by the millions on every rocky section of our coast. We use periwinkles for bait when there is nothing better, but the East Side considers them a delicacy. Great cuts of shark meat are in the market, and this is eaten for its quality and flavor as well as for economy. Commenting upon this investigation of East Side fish supplies, the *Butchers' Advocate* says that the fish industry needs a leader who will do for this group of food products what the great packers have done for the meat business, and it urges fish dealers, and the fish trade generally, to organize for a campaign to establish a sound industry while food saving makes a greater consumption of fish an important public issue.

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New York's Pure Food Laws.

New York State has no pure food law relating to beverages. New York City adopted the federal law but there are practically no regulations. On the manufacture of artificial mineral waters the City occasionally makes a spasmodic effort. The State Department of Farms and Markets recently had an amendment made to chapter 802, laws of 1917, which now stands as follows:

The terms "food," "foods" and "food products" shall include all articles used for food, drink, confectionery or condiments by man or other animals, whether simple, mixed or compound.

The amendment consisted of adding the word "drink." The law relates to whether such goods are marketed according to the labeling.

"Near-Beer" Illegal in Georgia.

"Near-beer" cannot be sold in Georgia. The Supreme Court of the State of Georgia recently decided that an imitation beer or a substitute for beer cannot be legally sold or offered for sale in that state. The case was an appeal from a Macon city court, where the defendant was convicted. The Court says: "It is within the police power of the State to enact laws which are designed to enforce other laws. The sale of near-beer may be a cloak for the violation of the liquor prohibition law."

"Near Beer" Included in Malting Restriction.

"Near beer" and temperance drinks which fall within the designation of malt liquor will not profit from the President's recent proclamation which limited brewers of beer to 70 per cent of the amounts of grains and other food materials that were used last year.

The Food Administration rules that the proclamation applies the same limitation to so-called temperance beers, as well as beers and ales. These prohibition beverages naturally are not affected by the limitation of alcoholic content, but they are affected by the limitation of the amounts of grain and food-stuffs which may be used in their manufacture.

Marketing of Bred Sows Decreasing.

Reports from the large live stock markets to the Department of Agriculture indicate that the rumor of a general tendency to sell bred sows for slaughter is without foundation. At most of the stockyards the percentage of sows docked for advanced pregnancy has decreased since the first of the year and is smaller for the first three months of 1918 than for the corresponding months of 1917. At a few markets a larger percentage of sows than normal showed advanced pregnancy, but this appears to have been due to delays in getting cars for shipments. Such a showing, in normal times or in the absence of special propaganda for increasing the national meat supply, probably would not have been noticed. The Department of Agriculture, after diligent inquiry, concludes that not only has there been no increase in the marketing of brood sows but that the number of brood sows retained on farms has increased, certainly by about ten per cent.

How to Keep Honey.

In selling honey as a substitute for sugar the retail grocer and his customers may encounter some difficulties through lack of knowledge of storing and handling this product. Housewives usually put the honey in the cellar for safe-keeping, probably the worst possible place, as honey absorbs moisture from the atmosphere and will become thin and in time sour. Comb honey kept in a damp place will be hurt in appearance as well as quality. A practical rule is to keep honey in any place where salt remains dry. If honey has granulated or candied, put the can containing it in a larger vessel holding water no hotter than the hand can be borne in. If the water is too hot, there is danger of spoiling the color and ruining the flavor of the honey. The can of honey should be supported on a block of wood in the vessel of water, so that the heat from the stove will not be too intense.

Courts Define Adulteration.

The Bureau of Chemistry of the Department of Agriculture reports as follows:

"With reference to the adulteration and misbranding of foods the following cases are of special interest. It was held in *United States vs. Lexington Mill & Elevator Co.* (232 U. S. 399, Circular 79, office of the Solicitor) that an article of food is adulterated if, because of any added poisonous or deleterious ingredient, it may by any possibility injure the health of the strong or the weak, the old or the young, the well or the sick, or any of these, or, conversely, that an article of food is not adulterated, within the meaning of the provision of the act by which an article is declared adulterated, 'if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health,' 'if it cannot by any possibility, when the facts are reasonably considered, injure the health of any consumer,' even though it contain 'a small addition of poisonous or deleterious ingredients.' The same provision of the act was further construed by the Supreme Court in *United States vs. 40 Barrels and 20 Kegs of Coca Cola* (241 U. S. 265; Circular 86, office of the Solicitor) in holding that the caffeine in Coca Cola is an 'added' ingredient within the meaning of the act contrary to the opinion of the Circuit Court of Appeals, which had held that a mixture or compound sold under its own distinctive name is not adulterated because it contains as one of its normal ingredients a poisonous or deleterious substance, since such poisonous or deleterious substance is not added to the article within the meaning of the provision, but is a part of it."

Wisconsin Cheesemakers Ask More General Enforcement of the Law.

At the recent convention of the Wisconsin Cheesemakers' Association in Milwaukee, the following resolution was passed:

Whereas, A large majority of factorymen are making cheese that complies with legal moisture standard; and

Whereas, Said factorymen are menaced by those who make high moisture test cheese; therefore be it

Resolved, That the moisture law be more generally enforced, especially during the winter months; and be it further

Resolved, That a copy of this resolution be sent to Hon. George J. Weigle, state dairy and food commissioner, Madison, Wis.

Whereas, There is a law on the statute books of the State of Wisconsin which requires the branding as such of whey butter; and

Whereas, There is nothing in the manufacture of whey butter which in any way conflicts with the standard for butter as defined under Section 4601-4a, paragraph 8, and further, believing that the branding of whey butter is of no value to the consumer and inimical to the best interests of the cheese industry; therefore be it

Resolved, That we, the members of the Wisconsin Cheesemakers' Association in convention assembled this 10th day of January, 1918, do hereby respectfully request the legislature of the state to repeal said law.

Resolved, That it is the sense of this convention that a maximum legal moisture standard be created for brick cheese.

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Frozen Fish Industry Under Discussion at Conference.

Every phase of the frozen-fish industry has been under intensive discussion at a conference in Washington between the Food Administration and representatives of the industry. In any consideration of fish as an essential part of the national diet, frozen fish play an important part. The Food Administration will endeavor to correlate the various factors affecting fresh and frozen fish and to have each play its full part in solving the country's food problem. Special attention in discussions of the frozen-fish question is being given to the margin of profits above merchandizing costs. The conference was attended by about 30 men representing eight Atlantic Coast states.

Burbot and Sablefish.

When the Pilgrims landed in this country, says Dr. H. F. Moore, in circular No. 23 of the Bureau of Fisheries, they recognized the cod, mackerel, salmon, and a few other members of old and respected fish families of Europe, and there were established from among them a veritable "codfish aristocracy" of the market. Additions to our sea-food diet have been accepted slowly, and some of the most valuable work of the Bureau of Fisheries recently has been the gaining of recognition for some of our neglected food fish. Two new delicacies which already have, or shortly will, appear on the dinner tables of the average American home are the burbot and the sablefish.

The burbot is variously called ellpout, eeling, ling, cusk and a score of names, most of which properly belong to other species, but its good old English name is rarely used in the United States.

The burbot has the distinction of being the only freshwater member of the cod family, all of its relatives living in the sea. Its habitat circles the earth, two almost indistinguishable species being found, one each, in the lakes and larger streams of the northern parts of the two hemispheres. In North America it occurs from the Arctic Circle, and perhaps beyond it, to the Ohio and Missouri Rivers, being particularly abundant in the Great Lakes and the larger waters of New England, New York, Canada and Alaska.

It is said to spawn in the winter and early spring and like most of its family is exceedingly prolific, estimates of the number of eggs ranging from 160,000 in a medium-sized fish to 670,000 in a large one. Its voracity is notorious. By day it hides in the holes and crannies of the bottom or in the deeper waters, but at night it goes forth to prey on other fishes, crayfishes, and, at least in early life, on aquatic insects and fish eggs. Its highly distensible stomach is as elastic as its appetite and it takes a heavy toll of its neighbors, the particular trait which has brought it into disfavor with the fishermen who brook no rivalry in their calling.

The meat of the burbot resembles, generally, that of the cod and haddock and it may be cooked like those fishes, with due consideration to its smaller size. If frozen, it should be purchased while still congealed and thawed in cold water immediately before using.

The sablefish has hitherto sailed under the alias "black cod." It is not a cod, and is not related to the members of that family by lineage, structure, or edible qualities.

The cod is dry-meated, while the sablefish is one of the richest and fattest of American fishes and is to be cooked differently. Its flesh is firm, white, and flaky, with a full, rich flavor, while the fats are almost gelatinous in their consistency. A high authority on dietetics in the Department of Home Economics of the University of Washington says that it "is excellent from an economic standpoint, as there is little waste, being almost free from bone and requiring very little time for cooking. It is suitable for the humblest home on account of its price and for the millionaire's table from its fineness of texture and delicious flavor."

Until now its excellence has been known to but a few persons on the Pacific coast, but the time has come when, on account of its edible qualities and low price, it should be made known to all. It is found in the deep water off the coast from San Francisco to Alaska, and is particularly

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abundant from Oregon northward. It has been caught more or less freely by the halibut fishermen for many years, but has been regarded as a nuisance because there was no market for it.

The sablefish as caught averages about 15 pounds in weight, although it grows much larger. On account of its firm texture it "ships" well and is therefore available fresh far from its home in the Pacific, and frozen (just as good) as far east as New York and New England. To obtain the frozen fish at its best the housewife should buy it still "in the frost" and thaw it in cold water immediately before using.

Food Value of Fish Shown in Experiments.

Further evidence that fish deserves a place in every diet, was obtained from a recent series of digestion experiments in the U. S. Department of Agriculture. These tests furnished scientific proof that fish, which has always been reckoned as a valuable food, is very completely utilized in the body.

In the experiments Boston mackerel, butterfish, salmon and grayfish—a variety not generally used in this country—were made into "fish loaves" and served as a basis of a simple mixed diet to young men of healthy appetites.

Both the protein and the fat of the fish were well utilized. Following are the percentages of protein digested: Boston mackerel, 93.1 per cent; butterfish, 91.9 per cent; grayfish, 92.8 per cent; and salmon, 93.2 per cent. The percentages of fat digested were found to be: Boston mackerel, 95.2 per cent; butterfish, 86.4 per cent; grayfish, 94.3 per cent; salmon, 93.7 per cent.

In addition to the fish loaf, the diet included potatoes, crackers, fruit, sugar, and tea or coffee. On the average the subjects each day ate 440 grams of Boston mackerel, 471 grams of butterfish, 440 grams of grayfish, or 355 grams of salmon, indicating that in every case the fish was eaten with relish. The experiments are described in detail in Department Bulletin 649, "Experiments on the Digestibility of Fish."

The department recently has concluded an investigation of the commercial freezing and storing of fish, and a bulletin just issued on that subject (No. 635) says that this

method of preserving fish will hold them for many months in the condition in which they were received, but will not counteract deterioration due to previous heating or mishandling. Chemical analyses show no significant changes in frozen fish held for 27 months—much longer than would be necessary or profitable in storing fish commercially.

Successful Use of Fiber Containers.

The use of fiber containers in marketing various food products has greatly increased because of the shortage of tin plate. The principal question raised concerns the kinds of products that can be successfully marketed in such containers. The Bureau of Foreign and Domestic Commerce has been advised by a manufacturer that the following-named articles have been successfully handled by the users of its fiber containers:

Sirups that do not ferment; jellies, jams, marmalades; honey; salted nuts; marshmallow products known under trade names such as marshmallow whip, mallo topping, and the like (these products to be used for soda fountain trade, household use, etc.), marshmallows; hard candies; chocolate-coated confections; sugar-butter (spread for bread); malted milk; glace fruit; cocoa; and spices.

The following named products can be placed in temporary or carrying-out fiber containers: milk, cream, mincemeat, peanut butter, and oysters.

The following named articles may be packed in fiber containers for a short length of time: cottage cheese and other soft curd cheeses; lard; pickled fish; sausage meat; horseradish; sauerkraut; ice cream, and various delicatessen products, and soda-fountain supplies.

Another use for the fiber containers is as measures for dried products, such as crackers, small cakes, salted peanuts, and candies.

One concern has reported that it has an order for fiber containers to be used for holding a liquid chemical fire extinguisher.

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France Reduces Bread Consumption One-Third.

France recently established a new regime of bread consumption on the following basis:

Children less than 3 years old, 3½ ounces per day.
Children from 3 to 13 years old, 7 ounces.

Persons from 13 to 60 years old, 10½ ounces (hard workers in this age class may receive 3½ ounces more).

Persons over 60 years old, 7 ounces.

This ration is about two-thirds of the bread allowance heretofore maintained. The fact that bread constitutes over one-half of the diet of the French nation and the further fact that the price of meat is such as practically to prohibit its use by a large part of the population make these figures highly significant of the extent to which the French people are going in their efforts to restrict food consumption.

Bread from Whole Grain.

From Italy is reported an excellent bread made from wheat which has never been milled. Starting with grain of good quality, free from foreign material, the process is as follows:

The grain is carefully washed, sifted, and soaked in tepid water from 48 to 60 hours, according to hardness of the grain. This causes it to begin germination and become soft and tender as well as undergo chemical modifications. Then it is fed directly into a kneading machine, worked into dough, allowed to rise like ordinary bread dough, and baked. It is gray in color, appetizing, of delicious flavor, and said to be highly nourishing, because it contains a considerable percentage of mineral salts, lecithin, and vegetable pepsin. Besides making more bread from a given amount of grain, there is a saving in labor. This bread is baked in municipal ovens of Burgame, Italy.

Diet Tests of Cottonseed Flour.

A series of experiments with cottonseed flour was recently conducted at the University of Texas by the Home Economics Department. Women students volunteered as subjects, and for five days ate a special diet made up of cottonseed flour in combination with corn meal, butter, sugar and grape juice. Each subject had 100 grams, or about 3½ ounces of cottonseed flour, in the form of bread. Results showed an average digestibility for the protein of cottonseed flour to be about 85 per cent, placing it in the same class as other cereals and breadstuffs. The conclusions are that cottonseed flour contains a very high percentage of tissue-building material, and will replace to advantage one-third of the wheat flour in ordinary diet. A bakery in New York City and another in Boston are reported to be regularly using cottonseed flour in making bread.

Millers Must Not Mix.

It is evident, says *The American Miller*, that some millers should be warned that they must not mix the flour of corn, rye, barley or any other cereal with wheat flour. The question has been asked more than once whether it was permissible to mill 264 pounds of wheat for a barrel of flour and then mix in enough corn flour to make up the deficit to the full 196 pounds.

It is not surprising that such questions should be asked, since the blending of the cereals with wheat flour has been urged on all sides. But the use of other

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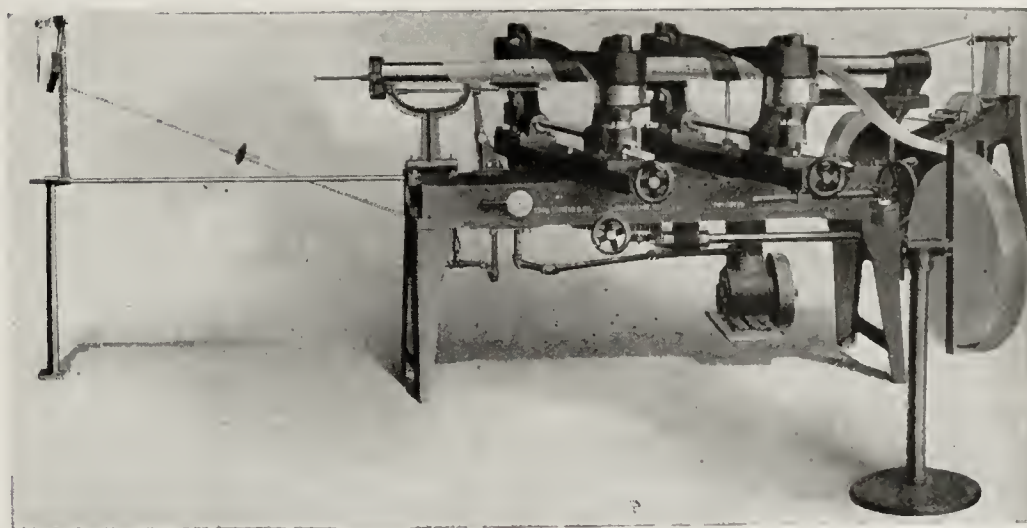
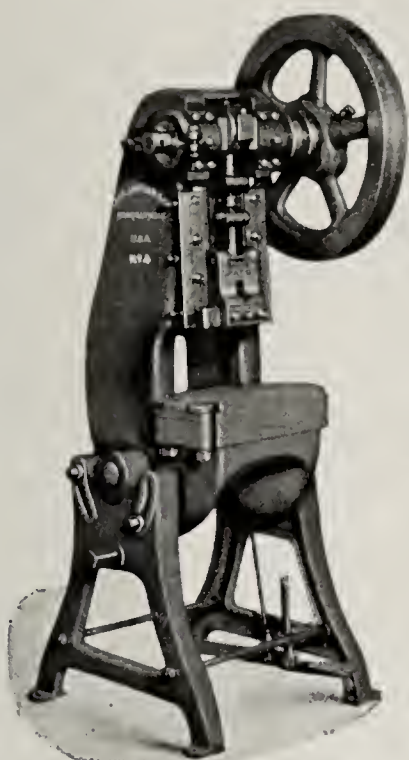
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flours with wheat flour for bread is permissible only to public and private bakers, not to millers. The Mixed Flour Law of 1898 is still in full force. It must be amended or its operation suspended before millers can mix. Such mixing is compulsory in British mills.

Strange Breads of Other Lands.

Recent dispatches from Germany have referred to bread made of beechnuts and acorns. This serves to recall that in the earliest days both of these were put to the same usage. Acorns are still made into bread by certain Indian tribes, and in Colonial times acorn meal was common among the natives. It is said that after being boiled several times the acorns lose their bitter taste, becoming sweet and wholesome.

Almost everything that grows has been called upon to make bread for man. In remote ages the Egyptians of the Nile Valley prepared bread from the seed of lotus flowers. These flowers grew abundantly in the mud of the river bottom, and when the annual overflow receded there was a harvest of lotus flowers, just as we harvest wheat today.

Early records of the North European peoples, particularly in Scandinavia, show that the poor subsisted partly on bread made of nothing more substantial than ground moss. But this had such slight nutritive value that it was almost worthless as a food. The Germans are eating potato flour bread, also a familiar makeshift of other days. When the ground potatoes are mixed with rye or wheat the bread is not unpalatable.

The Italians are adding to scant war rations with chestnut bread. The chestnuts of Italy and Spain are much larger than those of America, and chestnut bread is a familiar article of diet in both lands. We also hear much of banana flour, which is used to some degree in South America. Numerous attempts have been made to introduce it into this country, and it is now being manufactured commercially. If we may believe those who profess to know, banana flour is both nutritious and palatable.

The Mexicans and South Americans grind peas and beans into a meal which is then made into little cakes and fried. All kinds of cereals are eaten as bread the world over, millet

being one of the most popular in the East. Should the war continue for a number of years, it is just possible that the American people may be compelled to make the acquaintance of other breadstuffs than those to which they are accustomed.—*The Mediator*.

Bureau of Fisheries Recommends Use of Oysters.

The Bureau of Fisheries is distributing a poster giving reasons for eating oysters more generally. The oyster production of the United States is greater than that of all other countries combined, and there is available in this resource a vast quantity of animal food which should be utilized to the utmost at this time.

Federal and state inspections are now given to the sanitary conditions of the beds and the handling of oysters, and the producers are co-operating to assure the purity of the product.

Particular attention is called to not only the harmlessness but the excellence of "green-gilled" oysters. The gray-green color characteristic of this condition is never found on the body of the oyster, but is confined to the gills, fleshy plates which are brought into view when the edge of the oyster "crimps" in cooking. It is derived from a vegetable coloring matter in some of the delicate microscopic plants on which the shellfish feeds. Green-gilled oysters are usually fat and of excellent flavor and in France are regarded as the best obtainable. In the United States there has existed a prejudice against them on account of the erroneous belief that the color is due to copper.

The Bureau recommends oysters as without waste, digestible, wholesome, and affording an appetizing variant to the diet. A cook book containing 100 recipes can be had gratis by addressing Division F, Bureau of Fisheries, Washington.

Cactus Candy in Louisiana.

Cactus candy is now being made in Louisiana from the spineless cactus grown for cattle food. This candy makes a palatable confection, with only a reasonable amount of sugar used, the cactus being peeled, dipped in hot sirup or molasses, and coated with granulated or powdered sugar. It is said that the industry will enable sugar mills to utilize part of their machinery in candy making during the nine months of the year when they ordinarily are idle, and also that cactus candy can be made by housewives on southern farms, using home supplies of cane sirup, a standard farm product of the south.

Notices of Judgment Under the Food and Drugs Act

(Continued from the preceding issue.)

5151. Adulteration and misbranding of fluid extract for *Crème de menthe*.

A solution of oil of peppermint in diluted methyl alcohol, colored green with a prohibited coal-tar dye, was held to be adulterated because of the methyl alcohol and misbranded because the amount of the contents of the package was not plainly marked on the outside of the package. On November 13, 1916, the defendants pled guilty and were fined \$5.

5152. Adulteration and misbranding of fluid extract for *cognac fin-champagne*.

A solution of sugar, caramel and flavoring material in diluted methyl alcohol was held to be adulterated because of the presence of the methyl alcohol and misbranded because the amount of its contents was not plainly marked on the outside of the package. On November 13, 1916, the defendants pled guilty and were fined \$5.

5153. Adulteration and misbranding of fluid extract for *Swiss liquor*.

A solution of oil of wormwood with a small amount of oil of peppermint in methyl alcohol, and colored dark green with a prohibited coal-tar dye, was held to be adulterated because of the presence of the methyl alcohol and misbranded because the amount of its contents was not plainly marked on the outside of the package. On November 13, 1916, the defendants pled guilty and were fined \$5.

5154. Adulteration and misbranding of fluid extract for *mastika*.

A solution of oil of fennel in methyl alcohol was held to be adulterated and misbranded for the same reasons as in Judgment 5151; plea and fine also the same.

5155. Adulteration and misbranding of fluid extract for *white peppermint*.

A solution of oil of peppermint in methyl alcohol was held to be adulterated and misbranded. See Judgment 5151.

5156. Adulteration of *pork and beans*.

Partially decomposed pork and beans was held to be adulterated. On July 14, 1916, claimants having admitted allegations, it was ordered released to them on payment of costs and execution of a \$500 bond, conditioned that it be relabeled and denatured and not be sold or used for food.

5157. Adulteration of *oysters*.

Oysters to which water had been added were held to be adulterated. On December 11, 1916, the defendants pled guilty and were fined \$5.

5158. Adulteration and misbranding of *oil of lemon*.

A washed lemon oil mixed with an oil of high rotary power, probably an orange oil product, was held to be adulterated because of the presence of the washed lemon oil and misbranded because of the labeling "Oil Lemon." On September 23, 1916, the defendants pled guilty and were fined \$25.

5159. Adulteration of *oysters*.

Same as Judgment 5157.

5160. Adulteration of *oysters*.

Same as Judgment 5157.

5161. Adulteration of *oysters*.

Same as Judgment 5157.

5162. Adulteration and misbranding of so-called purified *wool fat*.

An article labeled as "Lanum" or "Purified Wool Fat," but containing petroleum products was held to be adulterated and misbranded. On July 20, 1916, claimants having admitted the allegations, it was ordered delivered to them upon payment of costs and execution of a \$300 fine, conditioned that it be disposed of only with a label approved by officials of the Department of Agriculture.

5163. Misbranding of "Stuart's Calcium Wafer Compound."

Misbranding was held because an article containing strychnine was labeled " * * * perfectly harmless * * * ." "Children may take it with freedom and their delicate organisms thrive with its use * * * containing no poisonous ingredients * * * contains no alcoholic stimulant, opiate, or mercury iodide potassium or similar poisons. It can be safely used by any person, man, woman or child with the assurance that no possible injury can result from its use," and because of the fraudulent nature of the claims on

the labels. " * * * No matter what degree of eruptive skin trouble you may have Stuart's Calcium Wafer Compound will purify and enrich the blood * * * containing in concentrated form all the elements to repair tissue and depleted blood * * * ." On July 6, 1916, no claimant having appeared, the product was ordered destroyed.

5164. Misbranding of "Stuart's Calcium Wafer Compound."

Same as Judgment 5163.

5165. Adulteration and misbranding of alleged *mustard seed*.

Imitation mustard seed consisting entirely of rapeseed, brown seed and dirt, was held to be adulterated and misbranded. On July 27, 1916, claimants having admitted the allegations, it was ordered delivered to them on payment of costs and a \$1,000 bond, conditioned that it be relabeled as rapeseed under supervision of a representative of the Bureau of Chemistry.

5166. Adulteration and misbranding of *vinegar*.

Vinegar to which distilled vinegar and water had been added, labeled "Pure Apple Vinegar," was held to be adulterated and misbranded. On July 13, 1916, no claimant having appeared, it was ordered sold after being rebranded as "Apple Vinegar and Distilled Vinegar Compound."

5167. Adulteration and misbranding of alleged *mustard seed*.

Same as Judgment 5165.

5168. Adulteration and misbranding of *brandy or brandy cognac type*.

An article consisting chiefly of neutral spirits colored with caramel, labeled "Brandy Cognac Type," was held to be adulterated and misbranded. On November 18, 1916, the defendants pled guilty and were fined \$50.

5169. Adulteration and misbranding of *vinegar*.

An article labeled "Pure Apple Cider Vinegar," but consisting of dilute distilled vinegar and dilute acetic acid product, was held to be adulterated and misbranded. On November 9, 1916, the jury gave a verdict of guilty and on November 24, the product was ordered delivered to claimants on payment of costs and execution of a bond.

5170. Misbranding of "Bovine."

A blood preparation containing alcohol and glycerol, the protein being practically all in a coagulable form, was held to be misbranded because of its fraudulent claims as a treatment for anemia, asthma, loss of appetite, chronic respiratory inflammations, catarrhal inflammations, heart disease, intestinal torpor, St. Vitus dance, colds and coughs, general debility, atonic dyspepsia, menstrual disorders, diabetes, chronic gastritis, malnutrition, nervous exhaustion, and phthisis, and effective as a preventive of consumption. On December 4, 1916, defendants pled guilty and sentence was suspended.

5171. Misbranding of "Fritch's Vegetable Liniment" and "Fritch's Vegetable Soap."

The liniment consisting of an alcoholic solution of chloroform, turpentine, camphor, capsicum, oil of cloves, methyl salicylate and free ammonia, was held to be misbranded because of its fraudulent claims as a remedy for fever and ague, and congestive chills, as a panacea for all aches and pains; as effective for restoring perfect health by removing the cause of the disorder, and for reducing all swellings promptly and permanently, and as an absolute cure for rheumatism, rheumatic gout, sciatica, neuralgia, stiff joints, sprains, burns, scalds, bed sores, boils, carbuncles, bronchitis, catarrh, cold in the head, hay fever, la grippe, asthma, canker, sore mouth, croup, whooping cough, headache, hoarseness, ulcerated sore throat, quinsy, swollen glands, tumors, pleurisy, lame back, earache, sore eyes, kidney and bladder diseases, dysentery, bloody flux, cholera morbus, and painful menstruation, for relieving the most excruciating pains instantaneously, for curing ear discharges and diseases of the ear and hearing when used in connection with "Fritch's Vegetable Soap." The soap, consisting of a hard, white, perfumed, cocoanut-oil soap with a citronella-like odor, was held to be misbranded because of its fraudulent claims as a wonderful cure in the treatment of scald head, eczema, scrofulous sores, tetter, barber's itch, and all humors of the skin and scalp, and effective for preventing falling hair and all scalp diseases, for preventing ulceration and gangrene in the most extensive and deepest burns, in curing chronic ulcers, and as the most

National War Savings Day June 28th

That's the day we sign up.

That's the day we tell Uncle Sam just how hard we want to win this war. That's the day our government has officially set for us to purchase War Savings Stamps.

On June 28th every man, woman and child in the United States will be called upon to pledge his or her full quota of War Savings Stamp purchases for 1918.

You will be expected to pledge the **full** amount that you can afford—no more—but by the same token, no less.

In every state, county, city, town and village the War Savings Committees are preparing for this big patriotic rally of June 28th. Unless you have already bought War Savings Stamps to the \$1,000 limit, get busy with paper and pencil and figure out the **utmost** you can do.

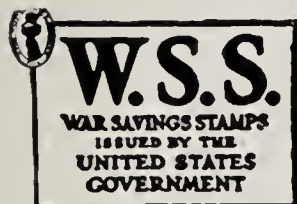
Remember this. You take no chances when you go the limit on War Savings Stamps. They are the best and safest investment in the world. They pay you 4% interest compounded quar-

terly. They **can't** go below par. You can get back every dollar you put into War Savings Stamps **any time you need it**. You can turn them in at the Post Office **any time** for their full value plus interest.

Uncle Sam is asking hundreds of thousands of men to **give** their lives to their country. He is asking you only to **lend** your money.

What are **you** lending?

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reliable and only sure means for curing stubborn festering sores which extend almost completely around the limb. On September 22, 1916, the defendants pled guilty and were fined \$20 and costs.

5172. Adulteration and misbranding of purified wool fat.
Same as Judgment 5162. No claimant appearing, product was ordered destroyed.

5173. Adulteration of oysters.
Same as Judgment 5157. Fine \$20.

5174. Adulteration of oysters.
Same as Judgment 5157. Fine \$10.

5175. Misbranding of "Perkins' National Herbs Blood Purifier Kidney and Liver Regulator."

Pills consisting of ash 16.5%, calcium carbonate 11%, sugars 39.9%, with an emodin-bearing cathartic drug and strychnine present, and rhubarb, licorice and umbelliferon indicated, coated with calcium carbonate, iron oxid and sugar, were held to be misbranded because of their fraudulent claims: as a blood purifier, a guaranteed remedy for all diseases arising from impure blood, stomach, liver, and kidneys; as a remedy for female complaints, rheumatism, kidney disorder, liver complaint, dyspepsia, stomach troubles, and skin diseases; as a treatment for neuralgia, fever and ague, scrofula, nervous affections, erysipelas, eczema, catarrh. On September 18, 1916, the defendants pled guilty and were fined \$75.

5176. Misbranding of "Dr. Lemke's Golden Electric Liniment" and "Dr. Lemke's St. Johannis Drops."

The liniment, consisting of 62.6% alcohol, 3.6 minims chloroform, 1.61 grams alkalinity, with free ammonia, camphor and capsicum present, and oil of sassafras, volatile oil of mustard, and ether probably present, was held to be misbranded because of its fraudulent claims as a remedy for rheumatism, neuralgia, weakness of the nerves, sore and swollen throat, stiff and swollen joints, all kinds of wounds, sprains, bruises, burns and scalds, for colic, cholera, diarrhea, flux, cholera in hogs, effective for relieving all external and internal complaints, as a cure for frozen limbs and for colic and cramp in horses and cattle, and as a remedy for croup and diphtheria in children when used by rubbing well on throat externally and when necessary by gargling or swabbing out the throat internally with reduced liniment. The drops, consisting of 43% alcohol, 0.011 gram morphine per 100 cc., 0.049 grain morphine per fluid ounce, 0.412 grain opium, 2.87 grams solids, with camphor, emodin, capsicum, ether and aromatic oils present, were held to be misbranded because of their fraudulent claims as a remedy for cholera, dysentery, palpitation of the heart, headache, indigestion, summer complaint in children, colic, diarrhea, flux and for all internal pain and inflammations. On October 11, 1916, the defendants pled guilty and were fined \$5 and costs.

5177. Adulteration of tincture of iodine.

An article containing 5.84 grams of iodine per 100 cc., instead of the 6.86, and 3.04 grams per 100 cc. of potassium iodid instead of the 5.0 called for by the U. S. Pharmacopoeia, was held to be adulterated. On September 18, 1916, the defendants pled guilty and were fined \$50.

5178. Misbranding of mentholatum.

An article consisting of menthol and camphor and boric acid in a petrolatum base was held to be misbranded because of its fraudulent claims as the safest and most rapid cure for hemorrhoids, a positive cure for burns, eczema in general, affections of the skin, an instantaneous cure for inflammation of the skin, tissues, and muscles, a rapid and safe cure for catarrh, croup, headache, toothache, rheumatism, and neuralgia, and a remedy for painful periods in women. On November 27, 1916, the defendants pled nolo contendere and were fined \$10.

5179. Misbranding of "Enteronol."

A product consisting of alum, camphor, ginger, emodin, capsicum, tannic acid and phenolphthalein, was held to be misbranded because of its fraudulent claims as a remedy for stomach and bowel diseases accompanied by loose evacuations, as a cure for Asiatic cholera, diarrhea, dysentery, cholera, typhoid fever, tuberculosis, and the diarrhea so common in children and infants. On February 14, 1917, the defendants pled guilty and were fined \$200.

5180. Misbranding of oysters.

Misbranding was held because the amount of the contents of the packages was not plainly and correctly marked on the outside of the packages. On February 23, 1917, the defendants pled nolo contendere and were fined \$25 and costs.

5181. Misbranding of cottonseed meal.

An article labeled "Guaranteed Analysis. * * * Protein,

38.55 to 41% * * * Crude Fibre, 8 to 12%," but containing only 35.50% protein and as much as 15.94% crude fibre was held to be misbranded. On December 14, 1916, the defendants pled nolo contendere and were fined \$10.

5182. Misbranding of cottonseed meal.

An article labeled as containing not less than 8% ammonia, 6.5% nitrogen, 41 to 45% protein, 8% crude fat and a maximum of 9% crude fibre, but containing less than these amounts of ammonia, nitrogen, protein and crude fat, and more than 9% crude fibre, was held to be misbranded. On January 30, 1917, the defendants pled guilty and were fined \$150.

5183. Adulteration of butter.

Partially decomposed butter was held to be adulterated. On July 18, 1916, it was ordered delivered to claimants upon payment of costs and execution of a \$2,000 bond.

5184. Adulteration and misbranding of mustard seed.

Same as Judgment 5165. No claimant appearing, article was ordered destroyed.

5185. Adulteration of pork and beans.

Mouldy pork and beans was held to be adulterated. On August 22, 1916, it was ordered released to claimants on payment of costs and execution of a \$400 bond.

5186. Adulteration and misbranding of wool fat.

Same as Judgment 5172.

5187. Adulteration and misbranding of alleged purified wool fat.

Same as Judgment 5172.

5188. Misbranding of "Dr. Harter's Lung Balm."

An article consisting of 61.2% non-volatile residue at 100° C., 60.24% sucrose, 3.65% alcohol, with chloroform present and antimony, tartrates, cinnamic acid and plant extractive material indicated, was held to be misbranded because of its fraudulent claims as a remedy for lung disorders and affections, influenza, consumption, chronic cough, lung fever, pneumonia, hoarseness, difficult breathing, pleurisy and pain or soreness in the chest, and effective for relieving congestion of the lungs, regulating the circulation, and removing all irritation. On September 25, 1916, the defendants pled guilty and were fined \$200.

5189. Adulteration of macaroni.

Partially decomposed macaroni was held to be adulterated. On October 19, 1916, no claimant having appeared, it was ordered destroyed.

5190. Adulteration of canned beans.

Filthy, putrid and decomposed canned beans were held to be adulterated. On September 12, 1916, no claimant having appeared, they were ordered destroyed.

5191. Adulteration of pork and beans.

Filthy, decomposed and putrid pork and beans colored with annatto was held to be adulterated. On December 4, 1916, it was ordered delivered to claimants on payment of costs and execution of a \$1,000 bond.

5192. Adulteration and misbranding of beans.

Decomposed beans with no statement of the amount of the contents on the packages were held to be adulterated and misbranded. On October 20, 1916, no claimant having appeared, it was ordered destroyed.

5193. Adulteration of tomato pulp.

Partially decomposed tomato pulp was held to be adulterated. On September 28, 1916, the defendants pled guilty and were fined \$40.

5194. Misbranding of "Stuart's Calcium Wafer Compound."

Same as Judgment 5163.

5195. Adulteration of pork and beans.

Decomposed pork and beans was held to be adulterated. On July 31, 1916, no claimant having appeared, it was ordered destroyed.

5196. Adulteration of canned pork and beans.

Filthy and decomposed pork and beans was held to be adulterated. On July 14, 1916, no claimant having appeared, it was ordered destroyed.

5197. Adulteration and misbranding of vinegar.

An imitation apple cider vinegar to which dilute acetic acid or distilled vinegar had been added, labeled "Pure Apple Cider Vinegar Reduced to Acetic Strength 40 Grain," representing that it was pure apple cider vinegar reduced in strength, was held to be adulterated and misbranded. On December 8, 1916, no claimant having appeared, it was ordered destroyed.

5198. Adulteration of sweet potatoes.

Partially decomposed sweet potatoes were held to be adulterated. On August 14, 1916, no claimant having appeared, they were ordered destroyed.

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5199. Adulteration of beef ribs.

Putrid beef ribs were held to be adulterated. On July 31, 1916, no claimant having appeared, they were ordered destroyed.

5200. Adulteration of spring lamb.

Putrid spring lamb was held to be adulterated. On July 31, 1916, no claimant having appeared, it was ordered destroyed.

5201. Adulteration of pork and beans.

Same as Judgment 5185.

5202. Adulteration of apples.

Partially decomposed apples were held to be adulterated. On August 10, 1916, no claimant having appeared, they were ordered destroyed.

5203. Adulteration of potatoes.

Potatoes tunneled and infested with larvae of tuber moth and containing live larvae, pupae, dead worms, live worms, and their excreta, were held to be adulterated. On July 20, 1916, the unfit portion was ordered destroyed, the fit to be delivered to claimants on payment of costs and execution of a bond.

5204. Adulteration and misbranding of olive oil.

Filthy, putrid and decomposed olive oil was held to be adulterated. Misbranding was held because of the false labeling " * * * Guaranteed Strictly Pure." On November 10, 1916, it was ordered delivered to claimants on payment of costs and execution of a bond, conditioned that it be used for mechanical purposes only.

5205. Adulteration of coffee.

Coffee to which chaff had been added was held to be adulterated. On January 2, 1917, no claimant having appeared, it was ordered destroyed.

5206. Adulteration and misbranding of "Pastillo Agua Mineral Natural."

A partially filthy and decomposed article was held to be adulterated. Misbranding was held because of the fraudulent nature of: its claims as a preventive of gastrointestinal diseases, typhoid fever, dysentery, enteritis, etc., as a remedy for anemia, uric acid diathesis, dyspepsia, and diseases of the kidneys and bladder, and as efficacious in affections of the stomach, kidneys and bladder, arthritis and anemia; the labeling "Saturated with carbon dioxide gas" when the article was artificially saturated; the labeling "The best table water" and "Collected free from disease germs"; and because the package failed to bear a statement of the quantity of its contents. On January 23, 1917, no claimant having appeared, it was ordered destroyed.

5207. Adulteration of pork and beans.

Filthy and decomposed pork and beans was held to be adulterated. On July 31, 1916, no claimant having appeared, it was ordered destroyed.

5208. Misbranding of candy.

Misbranding was held because the quantity of the contents was not plainly marked on the outside of the packages. On October 2, 1916, the defendants pled guilty and were fined \$100.

5209. Adulteration of oysters.

See Judgment 5157. Plea of nolo contendere. Fine \$20.

5210. Adulteration of oysters.

Same as Judgment 5157. Fine \$20.

5211. Adulteration of oysters.

Same as Judgment 5157. Fine \$10 and costs.

5212. Misbranding of "Dr. O. Phelps Brown's Herbal Ointment."

An article consisting of 98.55% petrolatum and 1.45% salicylic acid was held to be misbranded because of its fraudulent claims as a cure for lame or weak back, neuralgia, sprains, sore eyes, sore throat, sore lungs, quinsy, croup, all diseases of the skin, scrofulous complaints, and piles. On December 7, 1916, the defendants pled guilty and were fined \$50.

5213. Misbranding of "Dr. O. Phelps Brown's Herbal Ointment."

An article consisting of petrolatum and 0.77% salicylic acid was held to be misbranded because of its fraudulent claims as a remedy for pulmonary complaints, severe pains in the stomach, spinal diseases, affections of the heart and liver, neuralgia, glandular swellings, sore throat, sharp pains in the chest, croup, pleurisy, quinsy, earache, ear ulcers, sprains, tumors, mumps, white swellings, heart palpitation, scrofula, piles and fistula. On December 7, 1916, the defendants pled guilty and were fined \$50.

5214. Misbranding of "Taylor's Horehound Balsam."

An article consisting of 14.5% alcohol, 48.1% solids, 46.7% sugar as sucrose, 2.6 minims chloroform, 0.004%

total alkaloids, 0.02% chloroform extract indicating tolu, 0.06% methyl salicylate, with horehound and camphor present and a trace of ipecac, was held to be misbranded because of its fraudulent claims as a remedy for influenza, hoarseness and incipient consumption, as a relief for consumptive patients in advanced stages of consumption, and as a remedy for all pulmonary diseases. On October 9, 1916, the defendants pled guilty and sentence was suspended.

5215. Adulteration of tomato pulp.

Filthy, decomposed and putrid tomato pulp was held to be adulterated. On August 14, 1916, no claimant having appeared, it was ordered destroyed.

5216. Adulteration of tomato pulp.

Same as Judgment 5215.

5217. Adulteration of canned apples.

Filthy, decomposed and putrid canned apples in cans, a large percentage of which were swells and leakers, were held to be adulterated. On October 4, 1916, no claimant having appeared, they were ordered destroyed.

5218. Adulteration and misbranding of acid acetylsalicylate and acetylsalicylic acid tablets.

An imitation product of domestic origin containing no acid acetylsalicylate, containing acetanilid with no statement on the label of the amount of acetanilid, labeled "Acid Acetylo-Salicylate" and other words in a foreign language, was held to be adulterated and misbranded. The tablets containing no acetyl acid salicylic, although labeled as such, and containing acetanilid with no statement on the label of the amount of acetanilid, were held to be adulterated and misbranded. On February 1, 1917, the defendants pled guilty and were fined \$75.

5219. Adulteration and misbranding of cocoa.

Cocoa to which ground cocoa shells had been added, labeled "Jersey Pride Brand Cocoa," was held to be adulterated and misbranded. On August 8, 1916, it was ordered delivered to claimants on payment of costs and execution of a \$200 bond.

5220. Adulteration of oats.

Oats to which water had been added was held to be adulterated. On December 4, 1916, the defendants pled guilty and were fined \$200 and costs.

5221. Adulteration and misbranding of sweet cider.

Cider to which water and sugar had been added, labeled "Sweet Cider," was held to be adulterated and misbranded. On October 11, 1916, a verdict of guilty was given and a fine of \$40 and costs was imposed.

5222. Misbranding of evaporated apples.

Apples in packages, the quantity of the contents not being plainly marked on the outside of the packages, were held to be misbranded. On November 6, 1916, the defendants pled guilty and were fined \$50 and costs.

5223. Adulteration of eggs.

Filthy, decomposed and putrid eggs were held to be adulterated. On August 25, 1916, claimants having admitted the allegations, the eggs were ordered recandled under proper supervision and the bad eggs destroyed, the good eggs to be delivered to claimants on payment of costs and execution of a \$1,000 bond.

5224. Misbranding of "Breedon's Rheumatic Cure."

A hydroalcoholic solution of potassium iodid with guaiac and probably extract of colchicum seed and colocynth was held to be misbranded because of its fraudulent claim as a cure for rheumatism. On December 4, 1916, the defendants pled guilty and were fined \$25 and costs.

5225. Misbranding of macaroni.

Macaroni of domestic origin labeled "Pure Neapolitan Macaroni * * * Gragnano Style," not corrected by the statement in inconspicuous type, "Manufactured by the Ohio Egg Noodle and Macaroni Company, Cleveland, Ohio," was held to be misbranded. On January 31, 1917, the defendants pled nolo contendere and were fined \$10 and costs.

5226. Adulteration of oysters.

Same as Judgment 5157.

5227. Adulteration of oysters.

Same as Judgment 5157.

5228. Adulteration of oysters.

Same as Judgment 5157.

5229. Adulteration and misbranding of cider.

Cider to which water had been added, labeled "Pure Sweet Apple Cider," was held to be adulterated and misbranded. On September 20, 1916, no claimant having appeared, it was ordered destroyed.

5230. Adulteration and misbranding of bran.

A mixture of wheat bran, wheat middlings and ground

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screenings, labeled "Mill Run Bran," was held to be adulterated and misbranded. On December 14, 1916, the defendants pled guilty and were fined \$25 and costs.

5231. Adulteration of oysters.

Same as Judgment 5157. Plea of nolo contendere; fine \$75.

5232. Adulteration of spring water.

Filthy, decomposed and putrid spring water was held to be adulterated. On February 8, 1917, the contents of the bottles were ordered destroyed, the bottles to be returned to claimants on payment of costs and execution of a \$500 bond, conditioned that the bottles be used only for goods that were not illegal.

5233. Adulteration of eggs.

Filthy, decomposed and putrid eggs were held to be adulterated. On August 2, 1916, they were ordered delivered to claimants on payment of costs and execution of a \$200 bond, conditioned that they be sorted out under supervision of the Department of Agriculture, the unfit portion to be destroyed and the fit disposed of according to law.

5234. Misbranding of "Sulphur Bitters."

An article consisting of 21.4% alcohol, with wild cherry indicated, and emodin, aloes, and sulphur in suspension, indicated, was held to be misbranded because of its fraudulent claims as a remedy for dyspepsia, piles, dysentery, pains in the head, tapeworms, gout, scrofula and scrofulous humors, hay fever, rheumatism, neuralgia, malarial fever, cancer, diseases of the liver, skin diseases, pains in the back, side and shoulders, erysipelas, venereal diseases, headaches, hemorrhoids, chronic rheumatism and catarrh, as a preventive of consumption, and effective to produce beneficial effects in all infirmities peculiar to women, for the young or old, married or single, as a remedy for leucorrhea, painful menstruation, falling of the uterus, sterility, suppression, urinary troubles and all ulcerations of the uterus and vagina, indigestion, dropsy, pustules and diseases of the kidneys, as a treatment and remedy for psoriasis, herpes, erysipelas, tinea, carbuncles, pemphigus rupia, diabetes, ulceration of the eyes, scurvy and syphilis. On November 20, 1916, the defendants pled guilty and were fined \$25.

5235. Misbranding of candy.

Candy in package form, the quantity of the contents not being plainly marked on the outside of the packages, was held to be misbranded. On May 14, 1917, the defendants pled nolo contendere and were fined \$50.

5236. Adulteration and misbranding of vinegar.

Vinegar to which dilute acetic acid or distilled vinegar, water and mineral matter had been added was held to be adulterated and misbranded. On February 8, 1917, it was ordered released to claimants on payment of costs and execution of a \$300 bond.

5237. Adulteration of oysters.

Same as Judgment 5157.

5238. Adulteration of oysters.

Same as Judgment 5157.

5239. Adulteration of eggs.

Same as Judgment 5233.

5240. Misbranding of "Dr. DeWitt's Eclectic Cure" and "Dr. DeWitt's Liver, Blood and Kidney Remedy."

The "Cure," consisting of alcohol, water, ether, oil of sassafras, capsicum, and opium alkaloids, with lobelia indicated, was held to be misbranded because of its fraudulent claims as a remedy and cure for cholera, diarrhea, indigestion, neuralgia, headache, sore throat, rheumatism, cholera morbus, and sprains, and as effective for the relief of diphtheria, and as a remedy for cholera infantum. The "Remedy," consisting of a hydroalcoholic extract of buchu and rhubarb, with the iodids, nitrates, chlorids and sulphates of magnesium, calcium, sodium and potassium, was held to be misbranded because of its fraudulent claims as effective for the relief of Bright's disease, diabetes, retention of the urine, malaria, all diseases arising from derangement of the liver and kidneys, and scrofula, for the relief of pains in the back of the head, abdomen, and back, and sick headache, and as a remedy for female weakness. On October 10, 1916, the defendants pled nolo contendere and were fined \$40 and costs.

5241. Adulteration of eggs.

Filthy, putrid and decomposed eggs were held to be adulterated. On September 23, 1916, the fit portion was ordered released to claimants on execution of a bond, the remainder to be destroyed.

5242. Adulteration of eggs.

Same as Judgment 5233.

5243. Adulteration of eggs.

Same as Judgment 5241; no bond required.

5244. Adulteration of olives.

Filthy, decomposed and putrid olives were held to be adulterated. On December 19, 1916, the defendants pled guilty and were fined \$5.

5245. Adulteration and misbranding of lemon pie filling.

An article consisting of cornstarch flavored with citral and tartaric acid and colored with coal-tar dyes, labeled " * * * Boyd's Original and Genuine Lemon Pie Filling," was held to be adulterated and misbranded. On January 2, 1917, the defendants pled guilty and were fined \$5.

5246. Adulteration of horse beans.

Filthy, putrid and decomposed horse beans were held to be adulterated. On January 5, 1917, a jury gave a verdict of guilty and a fine of \$150 was imposed.

5247. Misbranding of "Alkavis."

A solution containing potassium nitrate, sodium benzoate, glycerin and vegetable extractives, was held to be misbranded because of its fraudulent claims as a remedy for diseases of the kidneys, liver and urinary organs, and blood impurities due to defective action of the kidneys. On January 2, 1917, the defendants pled guilty and were fined \$50.

5248. Adulteration of fava beans.

Fava beans infested with weevils and wormy were held to be adulterated. On September 30, 1916, claimants having admitted the allegations, the product was ordered released to them on payment of costs and execution of a \$1,700 bond.

5249. Adulteration of cocoa.

Cocoa to which 14% shells had been added was held to be adulterated. On September 5, 1916, no claimant having appeared, it was ordered destroyed.

5250. Adulteration and misbranding of "Pastillo Natural Mineral Water."

A filthy, decomposed and putrid article was held to be adulterated. Misbranding was held because the quantity of the contents was not plainly marked on the outside of the package, because the article was labeled "Natural Mineral Water * * * Saturated with carbonic acid gas and collected aseptically * * *," although it was an artificially carbonated mineral spring water, and because of the fraudulent nature of its claims as a preventive of gastrointestinal diseases, typhoid fever, dysentery, and enteritis, as a remedy for anemia, dyspepsia, diseases of the kidneys and bladder, stomach affections, arthritism, and kidney and bladder affections. On December 18, 1916, the defendants pled nolo contendere and were fined \$50 and costs.

5251. Misbranding of cottonseed meal and cake and cottonseed meal or cake.

An article containing less protein and more crude fibre than stated in the guaranteed analysis was held to be misbranded. On January 2, 1917, the defendants pled guilty and were fined \$95 and costs.

5252. Adulteration and misbranding of oats.

Oats to which water, barley, or bleached oats had been added, labeled as " * * * White Oats * * *," was held to be adulterated and misbranded. On February 20, 1917, the defendants pled guilty and were fined \$280.

5253. Adulteration of eggs.

Filthy, decomposed and putrid eggs were held to be adulterated. On October 24, 1916, they were ordered candled under the supervision of an inspector of the Department of Agriculture, the unfit portion to be destroyed, and the fit to be delivered to claimants on payment of costs and execution of a \$500 bond.

5254. Adulteration of oysters.

Same as Judgment 5157. Plea of nolo contendere; fine \$20.

5255. Adulteration and misbranding of apple cider.

Apple cider diluted with water, sugar and tartaric acid, labeled "Apple Cider. Fortified with Sugar, Tartaric Acid added," and labeled "Non-intoxicating," although it contained 4.64% alcohol by volume, was held to be adulterated and misbranded. On December 11, 1916, the defendants pled guilty and were fined \$20.

5256. Adulteration of oysters.

Same as Judgment 5157. Plea of nolo contendere; fine \$30.

5257. Adulteration and misbranding of pepper.

A mixture of pepper and pepper shells labeled as pure pepper was held to be adulterated and misbranded. On March 5, 1917, the defendants pled guilty and were fined \$600.

ADVERTISEMENTS in these pages are seen by those who manufacture food and those who control its sale.

The leading manufacturers in every branch of the food industry read THE AMERICAN FOOD JOURNAL. Not infinite in number, to be sure—there never can be many leaders—but great in influence.

Those whose official duty it is to enforce the many food laws of the Nation read THE AMERICAN FOOD JOURNAL. Here, again, the number is not great, but the influence is tremendous.

Those who want the *facts* about the food industry—doctors, dietitians, teachers, lecturers, writers and women actively interested in food—read THE AMERICAN FOOD JOURNAL. This is the element which has perhaps the greatest power of all to spread the gospel of sanity in food control.

Is this of interest to you?

The American Food Journal

15 South Market Street, Chicago

5258. Misbranding of cottonseed meal.

An article labeled "Analysis Protein 41 to 43%," but containing 38.87% protein, was held to be misbranded. On November 14, 1916, the defendants pled nolo contendere and were fined \$50 and costs.

5259. Misbranding of "Canary Brand Cotton Seed Meal."

An article labeled "*** 41 to 45% protein. Guaranteed Analysis *** Protein, 41% Fibre, maximum 10%." These are the minimum, guarantees frequently run higher," but containing 37.5% protein and 11.5% fibre, was held to be misbranded. On April 3, 1917, the defendants pled guilty and were fined \$100.

5260. Adulteration and misbranding of "Elixir of Phosphate of Iron, Quinine and Strychnine."

An article, the strength and purity of which fell below the professed standard under which it was sold, was held to be adulterated and misbranded. On September 30, 1916, the defendants pled guilty and were fined \$100.

5261. Adulteration of oysters.

Same as Judgment 5157. Fine \$25.

5262. Misbranding of "Nutritia Dairy Feed."

An article labeled as containing not less than 24% protein, 9% fat, and not more than 9% fibre, but containing 20% protein, 5.1% fat and 10.45% fibre, was held to be misbranded. On December 12, 1916, the defendants pled nolo contendere and were fined \$25 and costs.

5263. Adulteration and misbranding of vinegar.

Vinegar labeled "Apple Cider Vinegar," but containing added distilled vinegar, dilute acetic acid and mineral matter, was held to be adulterated and misbranded. On September 21, 1916, no claimant having appeared, it was ordered relabeled correctly and sold.

5264. Adulteration of eggs.

Filthy, decomposed and putrid eggs were held to be adulterated. On September 1, 1916, no claimant having appeared, they were ordered destroyed.

5265. Adulteration of eggs.

Same as Judgment 5264.

5266. Misbranding of "Hamer's Remedy Compound."

An article consisting of alcohol, volatile oils, principally turpentine, dark mineral oil, together with mercuric acholide and iodine compound, was held to be misbranded because of its fraudulent claims as a guaranteed cure, when used according to directions, for spavin, sweeney, ringbone, distemper, thoroughpin, side bone, splints, swellings of all kinds, lump jaw, fistula and poll evil, and effective for removing lumps of all kinds on either horses or cattle when used according to directions. On April 18, 1917, a jury gave a verdict of guilty and a fine of \$150 and costs was imposed.

5267. Adulteration of eggs.

Filthy, decomposed and putrid eggs were held to be adulterated. On September 23, 1916, claimants having admitted the allegations, the fit portion of the eggs was ordered released to claimants on execution of a bond, the unfit portion to be destroyed.

5268. Adulteration of shell eggs.

Substantially the same as 5267.

5269. Misbranding of "Payne's Syllax."

An article consisting essentially of emodin, plant extractive matter, magnesium sulphate, sugar, alcohol and water, with a white powder at the bottom of the bottle, consisting principally of calcium sulphate, was held to be misbranded because of its fraudulent claims as a remedy for diseases of the mucous membranes, catarrhal affections, indigestion, dyspepsia, catarrh and diseases of the blood, stomach, liver and kidneys, rheumatism, neuralgia, scrofula, skin eruptions, pimples and chronic sores, female troubles, prolapsus uteri or falling of the womb and leucorrhea. On February 24, 1917, the defendant pled guilty and was fined \$25 and costs.

5270. Misbranding of "Great Magic Condition Powders."

An article consisting essentially of potassium nitrate, calcium carbonate, sulphur, rosin, fenugreek, ginger, capicum, charcoal and gentian, was held to be misbranded because of its fraudulent claims as effective for reducing fevers associated with shipping colds, as a remedy for blood poison, distemper, pinkeye, coughs, colds, sore throat, bronchitis, epizootic, influenza, itching, rheumatism, founder, inflammation of the kidneys, bladder and bowels, and congested lungs as a relief for colic, and in the treatment of azoturia. On January 31, 1917, the defendant pled guilty and was fined \$25.

5271. Misbranding of "Dr. Bell's Pine Tar Honey."

A hydroalcoholic solution containing ammonia, glycerin, pine tar, sassafras, capicum, reducing sugars, an emodin

bearing drug, and alkaloids, was held to be misbranded because of its fraudulent claims as a cure for croup, whooping cough, all soreness of the throat, chest and lungs, and incipient consumption; effective for the relief of all coughs and allaying inflammation of the throat, chest, lungs, and bronchial tubes; *** effective *** for destroying microbes and contagious diseases, restoring the lungs, strengthening the respiratory organs and giving vigor and vitality to the whole system; a cure and preventive of catarrh and pneumonia; *** a specific for asthma and bronchitis, and a remedy for diphtheria, and for the further reason that the quantity or proportion of alcohol was not stated. On March 13, 1917, the defendant pled guilty and was fined \$100.

5272. Adulteration of shell eggs.

Substantially the same as 5267.

5273. Adulteration of shell eggs.

Substantially the same as 5267.

5274. Adulteration of shell eggs.

Substantially the same as 5267.

5275. Adulteration of shell eggs.

Substantially the same as 5267.

5276. Adulteration of evaporated milk.

Decomposed evaporated milk was held to be adulterated. On October 24, 1916, claimants having admitted allegations, the part of the shipment that was fit for food was ordered released to them on payment of costs and the execution of a proper bond.

5277. Adulteration and misbranding of pepper.

A mixture of pepper, sand and added pepper shells, labeled "Pepper *** Highest Grade," was held to be adulterated and misbranded. On December 1, 1916, the defendant pled guilty and was fined \$20.

5278. Adulteration of tomatoes.

Canned tomatoes, decomposed, were held to be adulterated. On November 16, 1916, no claimant having appeared, they were ordered destroyed.

5279. Misbranding of cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of "8% ammonia and 41% protein" was not substantiated by laboratory analysis, which showed 6.64% ammonia and 34.1% protein. On January 30, 1917, the defendant pled guilty and was fined \$50.

5280. Misbranding of "Lung Germine."

A hydroalcoholic solution containing free sulphuric acid and iron sulphate, and no alkaloids, arsenic or halogens was held to be misbranded because of its fraudulent claims as a treatment for diseases of the lungs and bronchial tubes. On December 11, 1916, the defendant pled guilty and was fined \$50.

5281. Misbranding of cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of "8% ammonia, 41% protein, 6½% nitrogen and 10% (maximum) fibre" was not substantiated by laboratory analysis, which showed, in several samples, 7.37%, 6.58%, and 7.44% ammonia; 37.9%, 33.8% and 38.3% protein; 6.06%, 5.41% and 6.12% nitrogen; 13.1% and 11.7% fibre, respectively. On April 4, 1917, the defendant pled guilty and was fined \$150 and costs.

5282. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "8% ammonia, 41% protein, 6½% nitrogen, 9% (maximum) fibre" was not substantiated by laboratory analysis, which showed 6.82% ammonia, 35.19% protein, 5.63% nitrogen, and 13.82% fibre. On January 30, 1917, the defendant pled guilty and was fined \$50.

5283. Adulteration of tumeric root.

Decomposed tumeric root was held to be adulterated. On October 19, 1916, the claimant consenting, the product was released under bond, it being stipulated that it should be used in industrial channels.

English Prosecutions for Food Profiteering.

In the month of April, 1918, the English Ministry of Food instituted more than 7,000 prosecutions for food profiteering. In 6,600 of these convictions were secured and the profiteers fined.

British Retail Price of Margarine.

Consul General Robert P. Skinner, London, reported early in April that the Food Ministry had announced the retail price of margarine at 11d (22 cents) per pound on sale to persons purchasing between 28 and 224 pounds weekly for consumption and not for resale. Other sales by retail, 1s (24 cents) per pound, plus ½d per pound on delivery made to premises.

THE AMERICAN FOOD JOURNAL



—with which was combined on May 15, 1918—

THE FOOD LAW BULLETIN

With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

ROBERT GORDON GOULD, *Editor*

Vol. XIII.

JULY, 1918.

No. 7.

Packers' Profits.

Recently the Federal Trade Commission issued a report on war profits in which extremely critical remarks were made regarding the profits made by the packers. Five firms—Armour, Swift, Morris, Cudahy, and Wilson—were especially mentioned, monopoly was charged and inordinate greed.

Among other data the Commission gave the figure of \$140,000,000 as the profit during the three war years, comparing it with an average annual profit of \$19,000,000 for the three years before the war. Careful reading shows that the larger amount should be compared with \$57,000,000 and not \$19,000,000, in order to make the comparison just, but not one man in ten would do other than compare the two figures as they were given in the report. This sort of thing approaches very closely the line which separates fairness from sharp practice. It is apparent that the Federal Trade Commission worships at the shrine of Demos.

As this report is published at a time when the matter of war finance is under discussion it very naturally arouses a great deal of interest. Lest ill-considered action be taken by the congressional committees having to do with finance Food Administrator Hoover sent to Senator Simmons, chairman of the Senate Finance Committee, a letter which for sound judgment and thorough-going fairness would be hard to equal.

As is well-known to all in the food industry, the prices offered for supplies by the United States authorities are based upon a fair average cost of production plus a reasonable profit. Some food establishments are unable to manufacture at this predetermined average cost, and others, because of their size, are able to manufacture at a figure slightly below the average cost. So

it is with the big packers of Chicago, who are responsible for about 40 per cent of this country's meat products. It is evident that the larger packers are, by force of circumstances, bound to make more money on the war orders given them than will be made by the smaller concerns. On the other hand, if the production figure had been that obtaining in the largest and most economically conducted establishments, every small packing house in this country would have been put out of business during the war, with the net result that at its termination the large packers, instead of having 40 per cent of the output, would have 100 per cent. Mr. Hoover's letter to Senator Simmons brings out these facts and states that in his opinion it is best to leave things as they are and to seek to reach the excess profits due to the war by means of a direct tax on earnings. It is to be hoped that Mr. Hoover's suggestions, rather than rash action which might naturally be expected to follow the report of the Federal Trade Commission, will guide the deliberations of the Committee on Ways and Means and the Senate Finance Committee.

Butter Standards Still Under Consideration.

The public hearing called by the Joint Committee on Definitions and Standards at Washington, June 24, 1918, resulted in nothing tangible in the way of results. The Joint Committee, being Messrs. C. L. Alsberg, I. K. Phelps and J. S. Abbott, representing the U. S. Department of Agriculture; Messrs. Wm. Frear, Julius Hortvet and J. P. Street, representing the Association of Official Agricultural Chemists; Messrs. E. F. Ladd, W. W. Randall and H. E. Barnard, representing the American Association of Dairy, Food and Drug Officials, was represented by Messrs. Als-

berg, Phelps, Abbott, Frear and Randall. There were present also many prominent members of the butter-making industry from all over the country.

The opening address was delivered by Mr. Martin H. Meyer, Secretary of the National Butter Makers' Association, who favored a simple 80 per cent butter fat standard.

The next speaker was Mr. Ed. H. Webster, General Manager of the Central Creameries of California, who was also in favor of an 80 per cent standard. Upon being interrogated by someone in the audience as to his views on the neutralization of cream, Mr. Webster, after appealing to the chair to see whether or not that question was before the house and being answered in the affirmative, expressed himself as favoring the use of alkali for reducing the acidity of sour cream. The discussion thus started lasted for a considerable period, various shades of opinion being voiced.

The Minnesota delegates, together with Mr. C. E. Lee, Assistant Dairy Commissioner of Wisconsin, suggested the labeling of butter in such fashion as to apprise the consumer that it had been made from cream which had been neutralized by alkali. Among those who expressed themselves as in favor of the use of neutralizing agents were Mr. Ed. H. Webster of California, Professors J. H. Frandsen and A. L. Haecker of Nebraska, Mr. P. W. Crowley of Iowa, Mr. Samuel Schlosser of Indiana, Professor H. A. Harding of Illinois, Professor O. F. Hunziker of the Blue Valley Creamery Co. of Chicago, and Professor G. L. McKay, Secretary of the American Association of Creamery Butter Manufacturers.

Dr. Abbott interrogated practically every speaker as to his views on the incorporation of water in the churning process; particularly did the dairy professors come in for close questioning on this point, action which one time seemed to arouse the resentment of Secretary McKay.

During the meeting it was made evident that the question of standards and definitions is still under advisement, and it will be some time before any definite announcements are made.

Lord Rhondda Dead.

During the past few weeks there have been many deaths of prominent people but none of greater importance than that of the late Lord Rhondda (David Alfred Thomas) Food Controller for Great Britain, whose demise occurred on July 3, 1918. Gossip has it that this loyal Britisher sacrificed his life to the Spartan regime under which he himself lived, his personal dietary being just a little lower in calories than that necessarily made use of by the humblest Briton.

New Meat Program.

The demand for beef for our Army, the armies of the Allies and their civil populations for this summer are beyond our present surplus. On the other hand, we have enough increased supply of pork this summer to permit economical expansion in its use. It will therefore be a direct service to our Armies and the Allies if our people will in some degree substitute fresh pork, bacon, ham and sausage for beef products.

The Food Administration requests all hotels and restaurants not to place on their menus or serve boiled beef more than two meals weekly, beefsteak more than one meal weekly, and roast beef more than one meal weekly. It asks householders not under any circum-

stances to buy more than $1\frac{1}{4}$ pounds of clear beef weekly, or $1\frac{1}{2}$ pounds, including the bone, per person in the household.

The public will realize that the changing conditions of production from season to season, the changing situation in shipping and, therefore, of the markets available to the Allies, and the increasing demand for our growing Army, with the fluctuating supply of local beef in France, all make it impossible to determine policies for a long period in advance. The Food Administration has recently asked for economy in all meat consumption; now it emphasizes further reduction of beef by the substitution of pork. It is anticipated that this program will hold good until September 15, and the Food Administration most earnestly requests co-operation of the public.

Eat More Fish.

The Food Administration has decreed that there shall be more fish eaten. It intends to stimulate a demand for fish and to increase the supply.

In fish there is the greatest margin for increase of all food—in two ways. First, with fields of the sea that are measureless and inexhaustible, no great maritime country has fewer fishermen per capita. And, second, we eat less fish than any other seaboard people. The Canadian eats his 29 pounds a year, the Englishman his 56, the Dane and the Dutchman quantities that the statisticians have felt it decenter to conceal from us; but we scarcely consume a scant 16. And in the case of fish, the Food Administration has set itself to stimulate—and mightily—production and consumption both.

It is even allowing the Teuton to help. In the rice ditches and "meadows" of the South, German carp are being introduced, with instructions to increase and multiply as if for the Vaterland. And in the salmon fisheries of Alaska, Germans and Austrians are still at work in numbers. The more slaughter they commit in the salmon runs and the more atrocities in the cleaning sheds, the better for all concerned.

Licenses Required for Stock Yards and Live Stock Dealers.

A Federal license by every commercial stockyard in the country which is to continue in business after July 25, 1918, and by all commission merchants and dealers in live stock in connection with stockyards, is required by a proclamation issued by the President. The licensing proclamation is one of a series issued by the President, under authority of the Food Control Act of last August, bringing the dealing in necessities under the control of the Federal Government.

The issuing of the latest proclamation follows the recommendations, printed in full in the June issue of the JOURNAL, of a committee on the live-stock and meat situation of the country, appointed by the President, consisting of the Secretary of Agriculture, the Secretary of Labor, the Food Administrator, the Chairman of the Federal Trade Commission, and the Chairman of the Tariff Commission.

The proclamation places the duty of exercising the regulatory powers in the hands of the Secretary of Agriculture. These powers have been delegated by the Secretary to the Bureau of Markets, of which Charles J. Brand is chief.

Because of the licensing machinery, developed by the Food Administration in connection with the licensing of concerns engaged in handling foods and

other establishments, the licenses will be handled through this organization.

Rules and regulations for licensees are being formulated by the Bureau of Markets and will be promulgated within the next few weeks. Suggestions will be received from stockmen, stockyard operators, representatives of live-stock organizations, and other interested parties.

The President's proclamation fixes penalties for all individuals and concerns operating stockyards, or dealing in live stock in connection with them, who fail to secure licenses by July 25.

The recommendation of the Committee on Meat Policies, which the President adopts and puts into effect, is as follows.

"The stockyards should be placed under license and regulation by the Department of Agriculture, which should also establish a governmental system of animal grading under suitable regulations and methods of price reporting of actual transactions. Daily reports should be made on distribution and destinations of live stock, meats and other products from principal packing points."

Egg Substitutes in Georgia.

Since May 15, 1918, the following ruling has been in effect in the state of Georgia:

"No substitute shall bear a trade name, distinctive or coined name, in which the word, 'egg' appears unless the preparation contain more than 51 per cent of whole egg.

"No substitute shall have anywhere on the package any picture of hen or egg, or any other misleading device.

"No substitute shall contain any artificial color unless it be a certified color and be declared as such on the label.

"No label of such substitute shall bear any statement, design, or device that is false or misleading in any particular."

The first paragraph is excellent, but the last paragraph is even more to the point. In many states the False Advertising Law has been emasculated by the insertion therein of the word "knowingly" in connection with the deceptive labeling or advertising. Any one who has nerve enough to try to foist upon the American public colored cornstarch at dried egg prices hesitates not at all to avail himself of such legal loopholes while on the witness stand.

Sugar Equalization Board Created.

To equalize the price of sugar to the consumer in the face of prospects for an increase due to a threatened shortage, and to secure better distribution, President Wilson on July 11, 1918, created a sugar equalization board, on recommendation of Food Administrator Hoover.

The board will be incorporated at \$5,000,000, the capital to be furnished by the president from his special war fund, and will have authority to acquire even at a loss to the government, the production of beet sugar factories that cannot under the present price of beets be sold to the public at a reasonable price, and other high cost sugar. This will be resold in the common lot at the stabilized price, thus saving considerable to the consumer.

Offices of the board will be in Washington. Mr. Hoover has been appointed chairman and George Rolph, sugar director in the food administration, president. The directors are F. W. Taussig of the tariff commission; Clarence Woolley of the war trade board; Sugar Administrator George Zabriskie, Theodore Whitmarsh and William T. Glasgow, all of the food administration.

An announcement by the U. S. Food Administration

said the new organization is expected to facilitate joint dealing with the Allies in foreign sugar and the adjustment of differentials in overseas freight rates. A small margin of profit may be made on the low cost of certain foreign sugar which may be purchased, thus securing equalization of the price to the consumer on a lower level than would otherwise be possible.

More Food Drying Plants Needed.

The U. S. Department of Agriculture and the U. S. Food Administration agree that establishment of more commercial plants for the drying of fruits and vegetables is highly desirable in the present emergency. Warning is given, however, against poor products and stock-selling schemes. Many inquiries regarding the extension of the drying industry, which is in its infancy in this country, are being received.

It is essential from the beginning to assure products of excellent quality, Government officials point out. Processes that do not give such products will lead to loss of capital and local discouragement and will retard the general movement. The public is advised to beware of irresponsible and unscrupulous stock-selling schemes. Establishment of drying plants and manufacture of high-grade products require skill and experience, absence of which may damage the industry through flooding the market with inferior products.

Drying when properly done is recognized as an efficient means of conserving food. The Department of Agriculture shortly will issue a series of illustrated articles on the drying of fruits and vegetables. Drying requires no sugar. New methods of preserving food in this form have been developed to cover nearly all the products of the garden. It is reported that the German Government has fostered the drying industry in that country.

According to the latest census, there are in Germany about 700 potato-drying factories (not including drying cylinders), 250 drying cylinders, 400 open drying plants, 150 corn-drying plants, 250 vegetable-drying factories, 225 drying plants in sugar factories, and 22 milk-drying plants. About 200 of the 1,500 malt kilns are also equipped for vegetable drying.

There were about 400 suitable concerns for the drying of cabbage turnips (kohlrabi) in the year 1916-17. The central office for drying put its plant at the disposal of the authorities for the drying of cabbage turnips, and placed numerous drying contracts with suitable factories. An agency system has also been established by which drying contracts are placed on behalf of land owners who do not themselves possess a plant.

Various States have established special organizations for the promotion of drying. The number of industrial firms which supply drying plants and auxiliary machines for drying has increased considerably during the war; 56 firms now supply complete drying apparatus, and 37 other firms supply auxiliary machines and parts.

In the technical sphere the central office has occupied itself with testing and approving new drying processes and testing the capacity of completed drying factories. Public authorities, industrial firms, commercial drying factories and agricultural circles alike have had increasing recourse to the central office for information, both about economic questions connected with drying and about technical processes.

The total capacity of the potato-drying factories now existing in Germany is 37,000,000 hundredweight.

PROGRAM

Twenty-second Annual Convention

ASSOCIATION OF AMERICAN DAIRY, FOOD AND DRUG OFFICIALS

Chicago, Illinois

August 27, 28, 29, 30, 1918

Headquarters CONGRESS HOTEL

Convention Hall THE FLORENTINE ROOM

TUESDAY, AUGUST 27, 9 A. M.
OPEN MEETING.

- (1) Invocation.
- (2) Address of Welcome.
- (3) Response to Address of Welcome, Benjamin L. Purcell, Dairy and Food Commissioner, Virginia.
- (4) President's Address, James Foust, Dairy and Food Commissioner, Pennsylvania.
- (5) "Canadian Food and Drug Control—Adulteration and Misbranding," Dr. A. McGill, Laboratory Inland Revenue Department, Ottawa, Canada.
- (6) "French Food and Drug Control—Adulteration and Misbranding," Lieutenant R. Renard, member High French Commission, Washington, D. C.
- (7) "Food Control in Switzerland," Fred'k Luthi, Chancellor, Swiss Legation, Washington, D. C.
- (8) "Municipal Food and Drug Control in the United States," Dr. W. A. Evans, Chicago.
- (9) Appointment of committees.
- (10) Report of the Secretary, John B. Newman, Superintendent of Division of Foods and Dairies, Illinois.
- (11) Report of the Treasurer, George J. Weigle, Dairy and Food Commissioner, Wisconsin.
- (12) Posting of Amendments to the Constitution and By-laws.
- (13) Report of Credential Committee.

Adjournment.

WEDNESDAY, AUGUST 28, 9 A. M.
EXECUTIVE SESSION.

- (1) "Sanitary Control of Food Producing and Distributing Places," Dr. S. J. Crumbine, Secretary, State Board of Health, Kansas.
Discussion: E. L. Barnhouse, Food and Drug Commissioner, Missouri; J. R. Garner, Chief Inspector, Central Division, Bureau Chemistry; L. M. Tolman, Chicago; F. C. Weber, Bureau of Chemistry, Washington, D. C.
- (2) Report of Committee on Co-operation, Benjamin L. Purcell, Dairy and Food Commissioner, Virginia.

Discussion: J. S. Abbott, Bureau of Chemistry, Washington, D. C.; W. C. Dumas, State Chemist, Georgia; E. J. Lee, Director, Bureau of Foods and Drugs, California.

(3) Report of Committee Appointed to Call Upon Federal Food Administrator Hoover to Arrange for Co-operation, Benjamin L. Purcell, Chairman.

(4) Committee on Milk Regulations. John B. Newman, Division of Foods and Dairies, Illinois, Chairman.

Discussion: B. H. Rawl, U. S. Department of Agriculture, Washington, D. C.; J. D. Mickle, Dairy and Food Commissioner, Oregon; C. W. Garrison, State Health Officer, Little Rock, Arkansas; A. F. Stevenson, U. S. Public Health Service, Washington, D. C.

(5) Committee on Definitions and Standards. Dr. E. F. Ladd, Food & Drug Commissioner, North Dakota, Chairman.

Discussion: Jane Rider, Director of State Laboratory, Arizona; S. R. McKelvey, Food and Drug Commissioner, Colorado.

(6) Committee on Amendments to the Constitution and By-laws, C. L. Alsberg, Chief of Bureau of Chemistry, Washington, D. C.

Discussion: W. M. Allen, Food and Oil Chemist, North Carolina; George J. Weigle, Dairy and Food Commissioner, Wisconsin; F. L. Woodworth, Dairy and Food Commissioner, Michigan; Thomas Holt, Dairy and Food Commissioner, Connecticut.

(7) "Distinctive Names, Artificial Products, Imitation Products, Synthetic Products, Substitutes," Charles F. McKinley, Division of Foods and Dairies, Illinois.

Discussion: William Freary, attorney, Collaborating Chemist, Pennsylvania; Harry L. Eskew, Food and Drug Commissioner, Tennessee; A. M. G. Soule, Chief, Food and Drug Department, Maine.

Resolutions regarding same.

Adjournment.

THURSDAY, AUGUST 29, 9 A. M.

OPEN MEETING.

(1) "Food Supplies at Cantonments," Major J. P. Street, former State Analyst of Connecticut now in military service.

Discussion: Thomas C. Galt, Chief, Dairy and Food Division, Ohio; J. K. White, Dairy, Food and Sanitary Inspector, Idaho.

(2) "Review of Court Decisions During the Past Twelve Months," William W. Williams, solicitor, Department of Agriculture, Washington, D. C.

(3) "The War's Effect on the Dairy Industry," Dean Eugene Davenport, University of Illinois.

Discussion: Prof. Oscar Erf, Ohio State University; E. F. Benson, Commissioner of Agriculture, State of Washington.

(4) "Food Regulations in War Time as Compared to Times of Peace," George L. Flanders, Counsel, Department of Farms and Markets, New York.

Discussion: Howard Heinz, U. S. Food Administrator, Pennsylvania.

(5) "Drug Standards," Dr. Edward Kremers, Wisconsin.

Discussion: L. A. Brown, Drug Chemist, Food and Drug Department, Kentucky.

(6) "The City Health Officer's Function in Food Control," Dr. J. W. Wright, Director of Public Health, Erie, Pa.

Discussion: F. C. Blanck, Food and Drug Commissioner, Maryland; Dr. H. E. Barnard, Food and Drug Commissioner, Indiana; R. B. FitsRandolph, Assistant Director, Department of Health, New Jersey.

(7) Unfinished Report of Canned Goods Committee, William Frear, Pennsylvania.

Discussion: L. M. Tolman, Chicago; Dr. W. D. Bigelow, Chief Chemist, National Cannery Ass'n, Washington.

THURSDAY, AUGUST 29, 7 P. M.

OPEN MEETING.

Association dinner, W. S. Nesbit, toastmaster.

"Food Nutrition and Conservation in Europe and Here," Prof. Alonzo E. Taylor, U. S. Food Administration, Washington, D. C.

Talk by H. G. Powell, Perishable Food Section, U. S. Food Administration, Washington, D. C.

FRIDAY, AUGUST 30, 9 A. M.

EXECUTIVE MEETING.

(1) "Co-ordination of State and Municipal Food Control with Especial Reference to Meat, Milk and Sanitation," Dr. H. E. Barnard, Dairy and Food Commissioner, Indiana.

Discussion: Wilbur S. White; James Sorenson, Dairy and Food Commissioner, Minnesota.

(2) "The Future Food and Drug Control," W. G. Campbell, Assistant Chief, Bureau of Chemistry, Washington, D. C.

(3) "Factory Inspections," J. R. Garner, Bureau of Chemistry, Federal Department, Chicago.

Discussion: W. G. Tice, Chief, Bureau of Foods and Drugs, New Jersey.

(4) Round table conference at which any commissioner may bring up any topic of interest with a view of finding out what has been done by commissioners of other States, that those concerned may mutually benefit by each other's experience.

(5) Report of Resolutions Committees.

(6) Action on All Reports.

(7) Election of Officers.

(8) Presentation of invitations for next convention.

Prune and Raisin Prices Agreed Upon.

"Maximum reasonable prices" to growers for the 1918 prune and raisin crops recommended by growers in California, have been accepted by the Food Administration.

Prune growers are not to receive more than 8½ cents per pound, net, and growers of raisin grapes will be given a maximum of 5½ cents per pound "in the sweat box."

These prices, especially that on prunes, are larger than they were expected to be, but conferences of growers, both association and independent men, held by Ralph Merritt, Federal food administrator for California, during the past six weeks have demonstrated that the general labor situation, increased costs, and probable prune shortage justify the prices recommended. These prices will give a stimulative profit to growers, without permitting them to profiteer.

Later conferences will determine the margins to be allowed various handlers of the crops, after which retail prices can be computed. This will result in stabilized prices to consumers. Future selling and speculation, which has caused high prices in the past, will thus be eliminated.

Light on Cold Storage.

Cold storage is too big a need of modern life to be downed by early prejudices. It has become an enormous business and has won the approval of producers and of all consumers who insist on getting a hundred cents' worth for a dollar.

During the war there has been a bigger demand for cold-storage space than ever before and, through the efforts of the Food Administration, many difficulties and abuses have been corrected. The rule prohibiting the making of loans by the warehousemen themselves up to more than 70 per cent of the value of the products in cold storage was designed to prevent market manipulations and large operations on small capital. It was predicted that this rule would result in lowered prices and consequent discouragement of production, but cold-storage space has been used to a greater extent this season than ever before and prices have continued on a high level, showing that this rule has not prevented cold-storage products from occupying their proper place in relation to other foods.

The consumer has been protected by a Food Administration ruling which prohibits the sale of cold-storage food as fresh. The dealer who patronizes cold-storage warehouses is protected by a regulation which prohibits the raising of rates for space without 30 days' notice. The Food Administration also prevents unjust, excessive and discriminatory storage charges and requires that rates be filed.

The fact that at the present time the United States Government is one of the largest users of cold-storage space is sufficient to remove all doubt as to the wholesomeness of food held in this manner. Each month we now ship to the allied nations more than 70,000,000 pounds of cold-storage and frozen beef, and it is anticipated that shipments will be largely increased. Additional cold-storage facilities are a growing need in our efforts to feed the Allies and our Army.

The Food Situation Discussed by Scientists

AT AN inter-allied conference held at Paris in November, 1917, it was agreed to set up an international Scientific Commission, which should meet periodically and should consider from a scientific point of view the food problems of the Allies, and in agreement with the inter-allied executives should make to the Allied governments any proposals which they might think fit.

This commission was to consist of two members appointed by each of the governments of Great Britain, the United States, France and Italy, to which, during the last few weeks, an additional representative has been added on the part of Belgium. The members of the commission are as follows: France, Professor Gley and Professor Langlois; Italy, Professor Botazzi and Professor Pagliani; Belgium, Professor Hulot; United States, Professor Chittenden and Professor Lusk; United Kingdom, Professor E. H. Starling and Professor T. B. Wood.

The commission has held two meetings—the first at Paris on March 25, and the second at Rome on April 29. At the first meeting in Paris, after determining the lines on which the commission should proceed and the mechanism to be set up for gathering all the information required, the commission came to an agreement as to the minimum food requirements of “the average man.”

It was decided that a man of average weight (70 kilos, or 154 lbs.), doing average work during eight hours a day, requires food as purchased with an energy value of 3,300 calories daily. At the same time the commission agreed that in case it should become impossible to supply this amount of food a reduction of 10 per cent on the above figure could be supported for some time without injury to health. The commission also agreed to accept Professor Lusk's figures as to the proportion of this amount to be assigned to women and to children of different ages.

In the meeting at Rome, the commission further considered questions of general interest on which agreement was necessary before it would be possible to calculate the food supplies and requirements of the Allies on a common basis. The conclusions agreed upon were summarized in a recent issue of the *Journal of Commerce* as follows:

1. The commission has decided to state the weights of the various foods produced in each Allied country in metric tons.

2. The commission has decided that it is not desirable to fix a minimum meat ration in view of the fact that no absolute physiological need exists for meat, since the proteins of meat can be replaced by proteins of animal origin, such as those contained in milk, cheese and eggs, as well as by proteins of vegetable origin. The commission on the other hand resolved to fix a desirable minimum ration of fat. This desirable ration amounts to 75 grams, about 2 $\frac{5}{8}$ ounces per average man per day. The ration will be made up—

(1) of fats of vegetable origin, and

(2) of fats of animal origin. If the amount of fats of vegetable origin are insufficient for this purpose, it may be necessary to maintain a certain stock of animals to furnish this fat.

3. The commission has established the “man value,” i. e., the number of average men equivalent to the population of each of the Allied countries. This “man value” is taken as the basis for calculating the exact amount of food which must be provided for the adequate nourishment of the total population of each country.

4. The commission has considered the estimates in tons of the home productions of the soil furnished by each Allied country for the year 1918-19. These statistics will serve as a basis for determining the amount of food available for men and for animals respectively in each country.

5. The commission recommends that each delegation in calculating the amount of calories available for men, should assign to men the maximum possible proportion of all cereals except oats.

6. The commission is of opinion that a uniform average milling extraction of 85 per cent for wheat be adopted throughout the Allied countries. It is recognized that this extraction may vary from 80 per cent in summer to 90 per cent in winter, and it can only apply to the United States as regards their internal consumption, and then only in case of scarcity.

7. The commission recognizes that the methods adopted for reserving the maximum possible proportion of the cereal production for the use of man may vary in each country. Man should always take precedence over animals in the allocation of food by the government. If this principle be accepted, the commission is of opinion that in the fixing of prices it is the prices of animal products which should be limited, rather than those of such vegetable products of the soil as may serve equally well for feeding men and animals. Thus the production of veal, pork and poultry at the expense of food available for man should be discouraged, and this is best achieved by fixing a price for those animal products which will make it unprofitable for the producer to feed them on cereals.

8. The commission reserves for its next meeting the task of examining the figures which will enable them to determine the caloric value of the home production of each of the Allied countries. The determination of this figure compared with the needs in calories of the population of each country will enable them to deduce the amount of imports necessary for the maintenance of the population, or the exportable surplus as the case may be.

9. The commission is of opinion that in all the Allied countries any propaganda having for its object the encouragement of food production and of economy in the use of food should be organized and directed by men of science well acquainted with the subject.

Erratum.

It seems to be quite impossible for our office adding machine to realize just where canned string beans stands in the dietetic scale. Not long ago in the chart of comparative food prices published monthly we

credited canned string beans with a calorific value ten times the true figure. Again we must bespeak our readers' indulgence in that in the June chart string beans, canned, were stated to cost 1.61 cents per hundred calories whereas the figure should have been 16.11.

Churning Oleomargarine

By E. KEEBLER,

Chief Engineer of the Mechanical Manufacturing Co., Chicago.

THE enormously increased consumption of oleomargarine in this country in the last year proves to a greater degree than any argument possibly can the popularity of this article. Expressed in figures, 152,000,000 pounds were consumed in 1916 and 232,000,000 pounds in 1917, while estimates from a reliable source place the 1918 figure at 350,000,000 pounds. Received with hesitation at first by the public, objections have been overcome in a surprisingly short time. There is nothing miraculous in this, however, for when the public receives the assurance of a good article being made in licensed factories, inspected by trained government officials, and also realizes the saving made, there need be no doubt of the outcome.

In speaking of oleomargarine, I have reference not only to that class of margarine which contains oleo (animal) oils, but to that comparatively new product termed *nut margarine*, which contains only vegetable oils.

The principal difficulty experienced with some manufacturers of nut margarine is that they are unable to keep the melting point above 75° F., while butter melts about 92° F. However, it is claimed by one manufacturer that his nut margarine has a melting point of 107° F. This possibly can be accounted for by the use of hydrogenated oils.

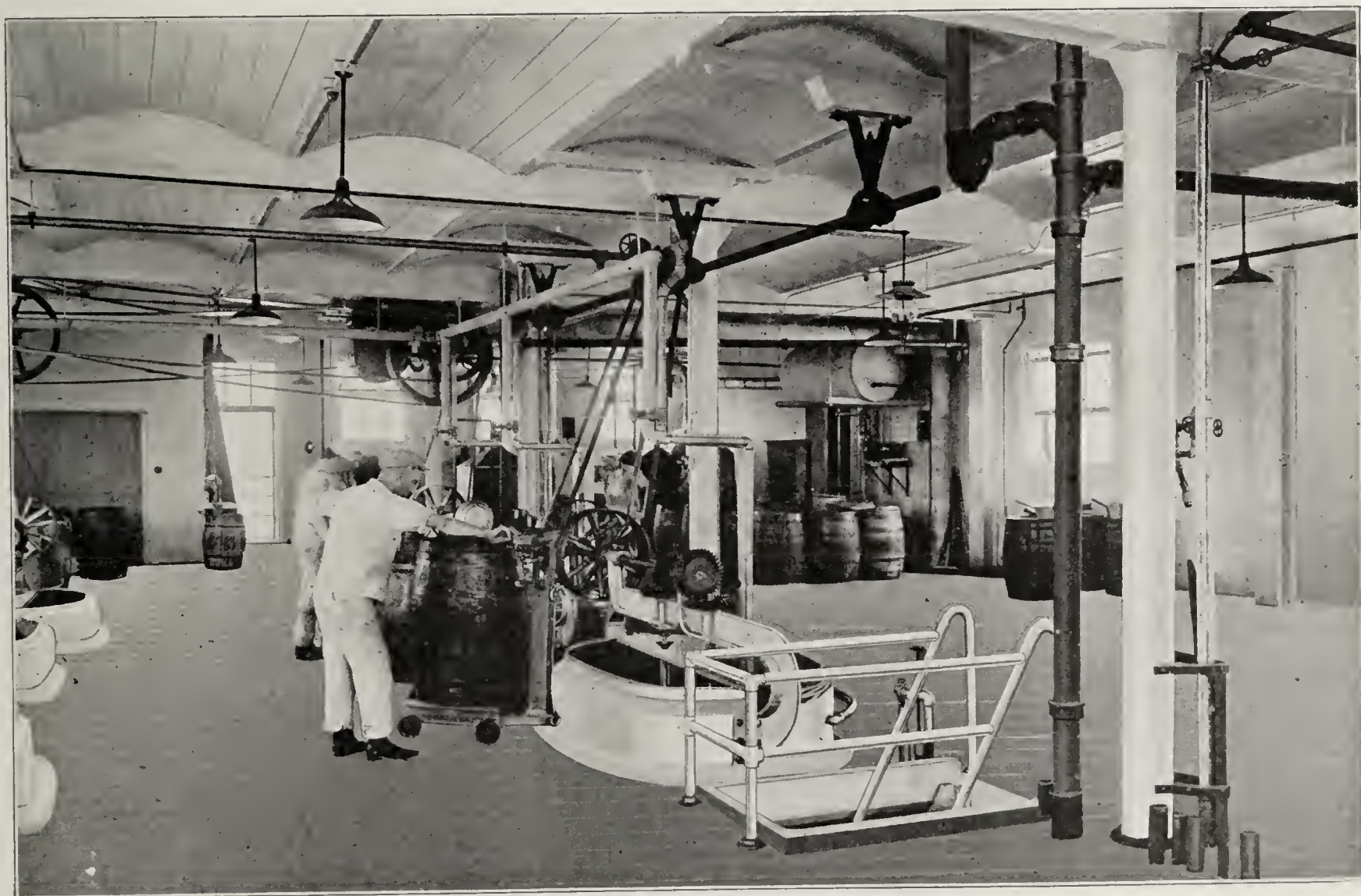
In the January issue, Mr. Glenn H. Pickard gave an

interesting description of the ingredients used in the manufacture of nut margarine. It is my intention to give the reader an insight into the actual working methods and conditions surrounding the churning, working and packing of oleomargarine, as employed by some of the largest manufacturers, together with data helpful to the experienced manufacturer as well as to those who contemplate starting in this business.

Nut margarine is being made by the same process and with the same equipment as oleomargarine, in fact, the federal laws which govern the manufacture of this product class both oleo and nut margarine as "oleomargarine," and the containers for them must be so labeled.

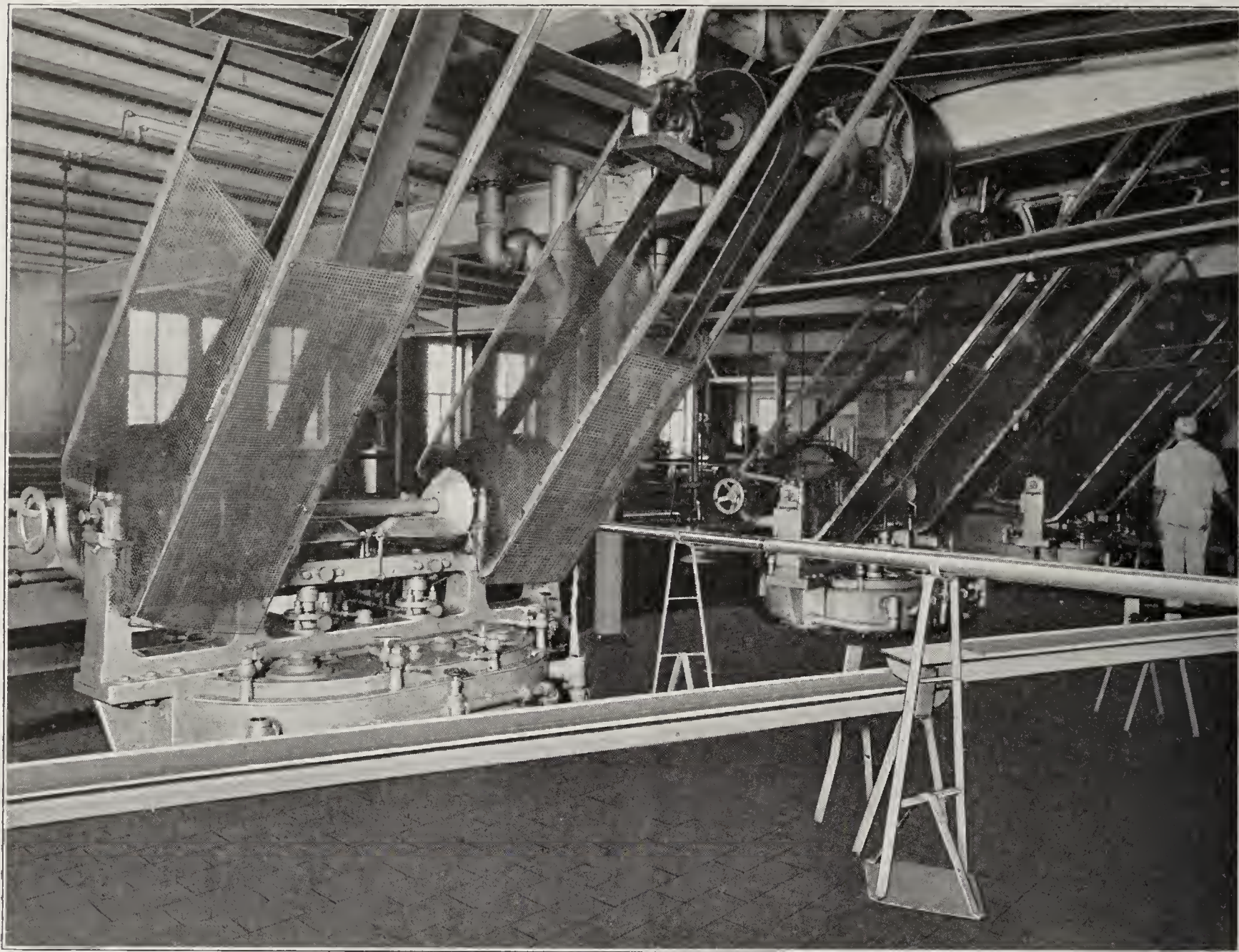
Composition.

All oleomargarine has for a base hard and soft oils. The soft oils are generally kept in storage tanks which have their outlet convenient to discharge into a tank set on a movable scale. (It might be said that all of the ingredients of oleomargarine are proportioned by weight.) The hard oils are weighed and placed in the melters shown in illustration No. 1. These melters, which are equipped with agitators, are tin lined, and have a capacity of 3,000 pounds each. The water jacket which surrounds them is kept at a temperature of about 125° F.



Photograph from the Mechanical Manufacturing Co.

1. Apparatus for Melting Hard Oils in a Sanitary Factory.



Photograph from the Mechanical Manufacturing Co.

2. Oleomargarine Churns, with Open Trough in the Foreground.

Churning.

The melted hard oils and soft oils are conveyed through sanitary pipes to the emulsion churn shown in illustration No. 2. Here they are mixed with sterilized and pasteurized milk, conveyed through an open tin trough, also shown in the illustration. Open troughs are used to facilitate thorough cleansing. These churns have two sets of driving pulleys, to permit reducing the speed one-half from the countershaft. They are also tin lined and have a capacity of 2600 pounds, and are surrounded on the sides and bottom by a water jacket. A new type of underdriven churn has recently been developed which has all the driving machinery located in a cast iron base, leaving the top of the churn as well as the entire floor free from driving machinery. This is a long stride towards sanitation as well as preventing accidents.

The batch is churned from 12 to 18 minutes in these machines, depending on the grade of product, the longer time being required for a higher grade product containing a relatively high percentage of milk. The water jacket temperature varies from 86 to 125° F., the higher temperature being required for the lower grade product in order to keep liquid the materials used. Automatic temperature control of the water jacket is now being used with considerable success. This control consists of an air-operated, thermostatic-controlled device with means of quickly changing the setting. The

use of this device eliminates all guess work in keeping the water at the proper temperature.

Crystallization.

After churning, the batch is discharged through a wood chute or flume, shown in illustration No. 3. At the end of this flume a wide flat nozzle sprays cold water on the emulsion, solidifying it. The water pressure in this nozzle varies from 10 to 20 pounds, depending on the color of the product, and the temperature of the water should be between 36° and 44° F., depending upon the quality of the product.

A somewhat antiquated method is used in some factories to solidify the emulsion. It is discharged into a short trough leading to a wood vat about 20 feet long, called a crystallizing vat, which has a wooden paddle wheel at one end to keep the water in circulation, means being provided to supply the vat with ice water from a storage vat. The emulsion having been solidified by contact with the chilled water, floats on top, and is removed by two men with a cheese-cloth net. It is apparent that this method brings into use considerably more equipment and occupies more valuable floor space than the flume system previously mentioned and which is shown in the illustrations. The quality and quantity of the product from either method is about the same.

Ripening.

Wooden trucks with removable bodies having a



Photograph from the Mechanical Manufacturing Co.

3. Scene Showing Crystallizing Chute and Ripening Trucks.

capacity of about 900 pounds are used to hold the oleomargarine, the purpose of making the bodies removable being to facilitate steaming and cleaning. No metal comes in contact with the oleomargarine from the time it is solidified until it is placed in cartons or tubs. The loaded trucks are next pushed into a room, the temperature of which is kept close to 70° F. Here a chemical change takes place which produces a certain flavor; this change is technically described as ripening.

Working.

The ripened oleomargarine is then placed on large circular workers or kneading tables about 8 feet in diameter, where the excess moisture is removed and dairy salt added, as is shown in illustration No. 4. It is sometimes found that the product at this point is dry, that is, it contains a low percentage of moisture. To remedy this it is worked in a blending machine, where the proper amount of moisture is added. This blending machine also serves the purpose of bleaching oleomargarine which has too deep a color. The manufacturer who contemplates interstate business should familiarize himself with the laws governing the qualities of oleomargarine, as some states prohibit the production or importation of oleomargarine having a yellow color.

Moulding Prints.

The average manufacturer of oleomargarine pro-

duces about 60 per cent prints and 40 per cent bulk or in tubs. This, of course, varies with the kind of trade and time of the year. There are various methods employed to form the oleomargarine into prints for cartons. Some use an oblong table on which is mounted a movable roller which flattens the product into a



Photograph from Armour & Co.

4. Working Table Loaded with Oleomargarine.

slab the proper thickness. Hand moulds of wood with sliding bottoms are then used to press out the prints. A recently developed machine forms and cuts the prints to size and weight. This machine, which is shown in illustration No. 5, has a capacity of 25,000 pounds per day and requires only a one horsepower motor to drive it.

The prints after being formed are placed on wooden trays which are carried by trucks or trolleys to the chill room, where they are left for a few hours to harden sufficiently to permit handling. The wrapping of the prints is done on a long table having a canvas belt conveyor top, the various operations of wrapping, placing in cartons, sealing and checking being performed here.

Essentials for Success.

The manufacture of oleomargarine requires care at every step to obtain proper flavor and grain. Absolute cleanliness is essential and to this end all machinery, containers and utensils must be frequently and thoroughly cleaned and sterilized, making generous use of steam and hot water. Absolute cleanliness in respect to body and clothing should be insisted upon. It is customary to employ a manicurist to take

care of the hands of all those who can possibly come in contact with the margarine. A close inspection of illustration No. 2 will disclose a small manicuring parlor in the far corner of the room. Wooden paddles and shovels should be supplied for those who handle the product.

It should also be remembered that it is impossible to make acceptable margarine with improperly refined or deodorized oils or rancid fats. Before shipping the manufacturer should test his product for color, curd, fat, moisture, and salt and grade accordingly. Experience is necessary to the successful manufacturer of butter substitutes, as numerous and widely varied conditions are to be carefully considered. Many manufacturers of this product have learned from sad experience that it is far wiser to employ a first-class, experienced man in starting a plant than to trust its operation to inexperienced help.

Formulas.

The following table of common proportions of oleomargarine shows the wide variation possible in the proportions and material used. There are all kinds of formulas, governed by cost of material and prices obtainable for finished product.

	Oleo Oil. Lbs.	Cotton Seed Oil. Lbs.	Neutral Lard. Lbs.	Oleo Stearine. Lbs.	Salt. Lbs.	Cream.	Milk.	Miscellaneous.	Remarks.
1.....	600	200	200	...	125	2 Cans	3 Cans	.....	Fair
2.....	400	200	300	...	125	90 lbs.	210 lbs.	200 lbs. Butter	Good
3.....	100 Yellow	550	...	100	125	.....	4 Cans Skim	250 lbs. Knuckle Oil	Cheap
4.....	100 Yellow	550	...	100	125	.....	4 Cans Skim	200 lbs. Butter Oil	Cheap
5.....	525	...	475	...	50	225 lbs.	.....	200 lbs. Creamery Butter	Good
6.....	525	...	475	...	65 to 70	300 lbs.	.....	.....	Good
7.....	600 Yellow	200	200	...	125	2 Cans	3 Cans	.....	Fair
8.....	300	200	350	...	60	.....	150 lbs.	.....	Fair

Standard milk and cream cans contain about 85 pounds.

Cream should be 18 per cent acid and 17 per cent butter fat, and milk 18 and 3½ per cent, respectively.

Factory Layout.

The most economical arrangement for a margarine factory is to have a building of four stories in height, all the ingredients being elevated to the top floor. On this floor should be located the melting tanks and also the storage tanks for the soft oil. The remainder of the floor can be used for barrel storage of oils. It is sometimes customary to locate on this floor a steam box for cleaning the barrels, and also a small laboratory for the testing of the oils used, as well as for the finished product.

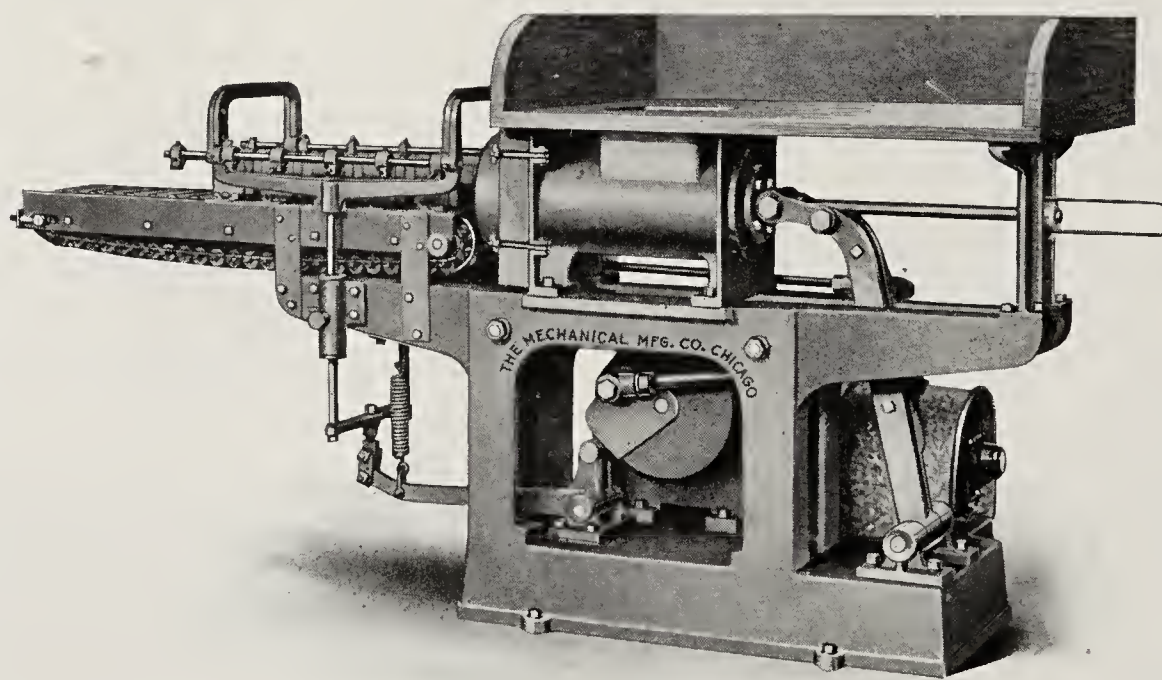
On the third floor should be located the sterilizing and pasteurizing equipment located in an enclosed room, with the

machines elevated a few feet above the floor. The emulsion churns are also located on this floor and set so that the top of the tanks are about 6 or 8 inches above the floor level. This method of setting up prevents water or other foreign material from entering into the churns. Needless to say, the floors should be made of waterproof material and pitched properly to drain off all moisture.

On the floor immediately below the churns should be located the crystallizing vats or flumes, and ample

space should be provided for truck storage. The trucks are usually lowered by an elevator to the floor below, where the ripening room is located.

On this floor the kneading tables and print forming tables are also located. In fact, one large room can be used for both machinery and ripening room. Adjoining this room a freezer should be lo-



Photograph from the Mechanical Manufacturing Co.

5. Machine for Forming Prints from Bulk Oleomargarine.

cated to harden the margarine before wrapping. The wrapping room should be located close to the freezer. If space is available on this floor, the shipping department could also be located here.

All drain water from the various floors should be brought to a separator tank to have the grease removed. Some concerns have even installed a rendering tank and cook the water to remove all of the grease, which can be sold as a good grade of inedible grease. It is advisable to use double and sometimes triple glass windows in order to insure against any

dust or obnoxious fumes entering the building, and to this end a washed air system is highly advisable.

The foregoing layout is used by practically every margarine manufacturer in the country. It should be remembered that the manufacture of margarine is one of the most delicate operations of any food product, and if success is to be achieved it must be through strict adherence to the conditions mentioned. However, for the thorough, practical man who desires to make this product there is an opportunity and field for growth which is both profitable and interesting.

New Wheat Prices Announced.

The Cereal Division of the Food Administration, formerly the United States Grain Corporation, from its headquarters in New York has announced new wheat prices, necessitated by advanced railroad freight rates, as follows:

No. 1 wheat of the northern spring, hard winter, red winter, Durum, and red white grades will be sold in the various markets at the following basic prices:

New York, \$2.39½; Philadelphia, \$2.39; Baltimore and Newport News, \$2.38¾; Duluth, \$2.22½; Minneapolis, \$2.21½; Chicago, \$2.26; St. Louis, \$2.24; Kansas City and Omaha, \$2.18; New Orleans and Galveston, \$2.28; Tacoma, Seattle, Portland, Oreg., Astoria, San Francisco, and Los Angeles, \$2.20.

The price basis for No. 2 wheat will be 3 cents below No. 1, and for No. 3, 4 cents below No. 2. Grades below No. 3 will be dealt in on sample.

Special classes of wheat will be sold on the following schedule: Dark hard winter, 2 cents above hard winter; dark northern spring, 2 cents above northern spring; amber Durum, 2 cents above Durum; yellow hard winter, 2 cents under hard winter; red spring, 5 cents under northern spring; red Walla, 7 cents under red winter; red Durum, 7 cents under Durum; soft white, 2 cents under hard white; white club, 4 cents under hard white.

Recent Bureau of Chemistry Announcements.

Under date of April 8, 1918, the Bureau of Chemistry of the U. S. Department of Agriculture in Service and Regulatory Announcement No. 22, published as Food Inspection Decision 172, the definitions and standards for condiments other than vinegars and salt, as they were adopted by the Joint Committee on Definitions and Standards, July 29, 1917, and approved by the Association of American Dairy, Food and Drug Officials, August 3, 1917, and by the Association of Official Agricultural Chemists, November 21, 1917, and which were officially signed by Secretary Houston, February 9, 1918. These definitions and standards were printed in full in the September, 1917, issue of this JOURNAL.

As Food Inspection Decision 173, the definitions and standards for canned vegetables, canned peas and canned pea grades, which were handled in the same manner as those for condiments other than vinegars and salt, were promulgated by the Bureau of Chemistry, the secretarial signature being February 15, 1918. These definitions and standards were printed in the September, 1917, issue of this JOURNAL.

Food Inspection Decision 174, signed by Secretary Houston on February 26, 1918, renders official the definition and standard for baking powder, which was adopted by the Joint Committee on Definitions and Standards November 18, 1916, and approved by the

executive committee of the Association of American Dairy, Food and Drug Officials for the Association of American Dairy, Food and Drug Officials April 2, 1917, and by the Association of Official Agricultural Chemists November 22, 1916. This matter was published in the March issue of this JOURNAL.

Saccharin Wins in New York.

The long expected decision of the Appellate Division of the Supreme Court of New York in the famous test case as to the legality of saccharin in food products—tried on its merits more than two years ago and since pending decision—was recently handed down and if newspaper reports are correct, is a complete victory for the saccharin manufacturers.

By a unanimous decision the Court in the action of the New York Health Department vs. Excelsior Bottling Works declares that the use of saccharin as a sweetener of food cannot be prohibited. The defendant was convicted in the Court of Special Sessions on a charge of selling bottled soda water sweetened with saccharin, the labels stating truthfully the amount of saccharin contained in the soda water.

It was charged that such sale constituted a violation of the provisions of the New York City Sanitary Code relating to adulteration, and also of a resolution of the Board of Health of New York adopted August 22, 1911: "That food or food products containing saccharin be deemed adulterated under the Sanitary Code."

Judge Laughlin, writing for the Court, holds that the use of saccharin, if fully and fairly disclosed on the label, does not constitute an adulteration within the meaning of the Sanitary Code, and that the resolution of the Board of Health, having never been filed with the City Clerk as required by law, does not constitute a valid amendment of the Sanitary Code.

But the Court does not stop here. It went further, and squarely decided that "since saccharin is not injurious to health its use may be regulated but cannot be prohibited under the exercise of the police power."

The trial of the case attracted much attention by reason of the heavy batteries of lawyers arrayed on the two sides of the contest and the eminence of the expert witnesses summoned to ascertain whether or not saccharin was really injurious.

This decision will be of interest to all food control officials. Despite the fact that saccharin is quoted on the wholesale market at \$30 a pound, its use is being counselled by some of the trade papers and, no doubt, being considered by manufacturers of certain products.

At present fifteen states bar the use of saccharin—Alabama, Arkansas, Georgia, Louisiana, Michigan, Minnesota, Mississippi, Nebraska, New Jersey, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania and Utah.

The Sugar Situation

The United States Food Administrator has made the following statement regarding the sugar situation and the necessity for increased conservation measures, outlining the restrictive regulations which became effective July 1.—Editor's Note.

A NUMBER of causes have cumulated to make our sugar position more difficult than we could have anticipated at the beginning of the year. The increased shipping needed by our growing army in France has necessitated the curtailment of sugar transportation, particularly from the longer voyage, and has thus reduced supplies both to the Allies and ourselves from remote markets. Some of the accessible sugar producing areas have proved a less yield than was anticipated, such as certain West Indian islands. The domestic beet and Louisiana crops have fallen below anticipation. There has been some destruction of beet sugar factories in the battle area of France and Italy. We have lost considerable sugar by submarines.

As close an estimate as we can make indicates a reasonable expectation from all sources of about 1,600,000 tons of sugar for United States consumption during the last half of the present year. This is based upon the maintenance of the present meager Allied ration. An improvement in shipping conditions would, of course, relieve this situation, as quantities of sugar are in unavailable markets. We must, however, base the distribution of sugar during the next six months upon the above footings. After that period the new West Indian crops will be available.

This supply of 1,600,000 tons necessitates a considerable reduction in our consumption. To provide three pounds of sugar per month per person for household use, to take care of our Army and Navy, and to provide for the necessary preservation of fruit, milk, etc., will require about 1,500,000 tons of sugar for the six months. A household consumption of three pounds per month per person, together with the special allowance for home canning, means a reduction of some 25 per cent in these branches of consumption from normal, but it is still nearly double the ration in the Allied countries and is ample for every economical use.

In the plan of distribution which will now go into force, the less essential users of sugar—that is, confectioners, soft drink manufacturers, tobacco manufacturers, etc., will be hit the hardest. The Food Administration regrets intensely any action that will cause hardship to any individual, but the situation is due to the Germans, not to this Government. There are a number of substitutes available to the confectioners upon which no restrictions are placed.

In order to secure justice in distribution and to make the restrictive plans as effective as possible, no manufacturer or wholesaler of sugar will be allowed after July 1 to sell any sugar except to buyers who secure a certificate from the local Food Administrators, indicating the quantity they may buy. For the purpose of issuing these certificates, the various users of sugar are divided into the following groups:

A. Candy makers, soft drinks, soda fountains, chewing gum, chocolate and cocoa manufacturers, tobacco manufacturers, flavoring extracts, invert sugar, syrups, sweet pickles, wines, etc.

B. Commercial canners, vegetables, fruit, milk, medicinal purposes, explosives, glycerine, etc.

C. Hotels, restaurants, clubs, dining cars and steamships, boarding houses, hospitals, public institutions

and public eating places generally, in which term are included all boarding houses who take care of 25 persons or more.

D. Bakers and cracker manufacturers of all kinds.

E. Retail stores and others selling for direct consumption.

Every person in these categories must, before July 1, or as soon thereafter as the local Food Administrator determines, make a statement upon a form that will be provided showing the sugar they hold or have in transit on July 1. All stocks in excess of three months' supply at the rate of consumption that will be allowed in each concern, will be requisitioned by the Administrators and redistributed at once. Any stock less than 90 days but in excess of 30 days must be held subject to the local Administrator for distribution if necessary, depending much upon remoteness from source of supply. It is manifestly unfair for any one to be overstocked in such a situation as this, as it must prejudice the common interest of regular flow of supplies. Our national sugar supply does not come from stocks but arrives in monthly amounts and any attempt to provide ahead results in shortage. Any attempts to accumulate stocks in the interim between now and July 1 will be useless and may lead to difficulties, for the Food Administration will construe any such attempts by dealers and manufacturers as hoarding and upon conviction as punishable by fine or imprisonment. While in law the same rule might be applied to householders, the Food Administration proposes to rest upon the honor and co-operation of the householders not to hold more than a 30-day supply upon the basis of three pounds per person in the household.

In addition to giving the quantities on hand, the statements which will be required from dealers and manufacturers in the above groups will give the following further information upon honor. In the case of Group A—that is, candy, soft drinks, etc., must show the amount of sugar used during the months of July, August and September, 1917, and certificates will, if the statements are correct, be based upon 50 per cent of such average use. Ice cream makers will be entitled to 75 per cent. A certificate will be issued separately for each month's purchases.

Group B—that is, commercial canners, etc.—will be given certificates for their necessary requirements but any re-sale of sugar by them except under the express direction of the local Food Administrator will constitute a violation of the regulations and subject them to closing of business for the war. Any sugar in hand at the end of the season must be placed at the disposal of the local Administrator. The Food Administration appeals to this group to economize on consumption in every direction.

Group C—that is, public eating places—will be issued certificates upon the basis of three pounds for each 90 meals served. This includes all public eating place users of sugar.

Group D—that is, bakers—will receive certificates for 70 per cent of the average amount used during July, August and September, 1917, or, alternatively, 70 per cent of that used in the month of June, 1918.

Group E—that is, retail stores—will receive for July purchases certificates based upon the average of sugar sold during the combined three months—April, May and June, 1918. Retailers must not sell sugar to any of the other groups—that is, to no one except householders, without taking up the certificates of such persons. They must not sell more than two pounds at any one time to any town customer or more than five pounds at any one time to any country customer. The latter may, however, be varied by the local Administrator to persons remote from town. The retailer will do his best not to sell more than three pounds per person per month to householders, whose co-operation with the retailer is earnestly sought.

Retailers may, as at present, sell 25 pounds of sugar to any one household for home canning upon the householder's certifying that he has not bought elsewhere and agreeing to return any balance unused for this purpose. The householder can obtain more than 25 pounds upon approval of local Administrator, if supplies are available.

It will be seen by this plan that there is no direct rationing of the householder. It would cost the Government \$5,000,000 to put the householder on a ration card and will take the services of 100,000 people to carry it out. We cannot afford the labor or money and if householders will co-operate it can be avoided.

No wholesaler or refiner can sell any sugar whatsoever unless he receives the certificate above mentioned. Any person in the above five groups who does not file his statement will receive no sugar during the war and action will at once be taken against any sugar he may have in hand in excess of 30 days' supply, and he will be charged with hoarding. We ask the co-operation of all trades in our purpose, that is, simply to secure justice in distribution.

Under date of May 20, 1918, the Food Administration published the following pertinent data concerning prices:

The United States consumed in the first year of the war, April, 1917, to April, 1918, 4,109,291 tons of sugar—8,218,582,000 pounds.

The wholesale price of refined sugar in the United States at the present time is \$7.30 per 100 pounds. An increase of 1 cent per pound in the price of sugar would take from the pockets of the consumers at least \$82,185,820.

The regulated wholesale price in Canada is \$8.07 per 100 pounds; in the United Kingdom, \$12.59; in France, \$12.28; and in Italy, \$26.30.

Canada's consumption of sugar for the year ending March 31 was 352,200 tons. The consumption of France for 1916 was 570,621 tons; the consumption of the United Kingdom was 1,565,599 tons, and the consumption of Italy was 276,953 tons.

The total consumption of sugar for the four countries was 2,765,373 tons—the total cost of which was \$736,884,703, or an average cost per ton for all sugar consumed in the four allied countries of \$266.47 per ton. Had the sugar consumption of the United States for the past year been paid for at this price, the total would have been \$1,095,002,772. The cost of the sugar consumption for the United States for one year at the prevailing price of \$146 per ton will amount to \$599,956,486.

If sugar consumption in the United States for the coming year remains at the same figure as that for last year, the saving, as compared with prices prevailing in the four allied countries named, will total \$495,046,286.

The wholesale price of sugar in the United States is now \$7.45 per hundred pounds less 2 per cent at seaboard points, or about \$7.30 net. In August of 1917, the price reached \$9.15 per hundred pounds. The refiners now receive \$1.30 per hundred pounds for refining as against a difference between raw and refined sugar up to October 1, 1917, ranging from \$1.60 to \$2.05.

Louisiana Prohibits the Use of Saccharin in Foods. TO BOTTLERS AND DEALERS IN SOFT DRINKS, FRUIT SYRUPS, ETC.:

Your attention is directed to Food and Drug Regulation 28, which reads as follows:

REG. 28. SACCHARIN PROHIBITED.

The use of saccharin in any food product is prohibited.

The use of quantities not exceeding one-tenth of one per cent of benzoate of sodium is permitted in goods in which generally it has been so used.

The addition of benzoate of sodium shall be plainly stated on the label.

This ruling was made since the continued use of SACCHARIN IS INJURIOUS AND DELETERIOUS TO HEALTH. Saccharin has no food value and is used as a substitute for substances in food products (sugar, etc.) which do have a food value.

All bottlers and syrup manufacturers must comply with the rulings of the Food Administration to save sugar. Other substances may be used to substitute sugar which are nutritious and not injurious to health.

The United States Department of Agriculture recently reaffirmed its ruling prohibiting the use of saccharin. U. S. Food Inspection Decisions Nos. 135, 138, 142 and 146 prohibit the use of saccharin in food products.

Dealers and manufacturers are warned that the use of saccharin in food products makes them liable to prosecution.

Penalty.—1. Not less than \$10, nor more than \$200. 2. Not less than \$25 nor more than \$400. 3. Not less than \$50 nor more than \$500. Of imprisonment for not less than 10 days nor more than 6 months, at the discretion of the court.

This Bureau will make a strong effort to apprehend all persons failing to comply with Food and Drug Regulation 28. Do not listen to what vendors of saccharin may say regarding its use being permitted.

Remember! Saccharin prohibited.

OSCAR DOWLING,

President and Ex-Officio Food Commissioner.

Circular No. 18, May 27, 1918, Bureau of Food and Drugs, Cassius L. Clay, State Analyst.

Commercial Production of Edible Fats in May, 1918.

From a preliminary summary issued by the Bureau of Markets of the U. S. Department of Agriculture it appears that the production during May, 1918, of the several edible fats enumerated below was as follows:

	Pounds
Creamery butter (3,164 factories)	75,128,697
Oleomargarine (uncolored)	23,080,801
Nut margarine (uncolored)	4,324,386
Process Butter	1,108,429
Whey Butter	364,462
Oleomargarine (colored)	59,320
Nut margarine (colored)	1,330

The figure for nut margarine is especially significant when it is realized that in May, 1917, the corresponding figure was 721,730—showing an increase of 600%.

Penalties Under Food Control Act

For violations of the U. S. Food Administration's regulations a number of licensees were penalized during the past few weeks. Among them were the following:

Thomas J. Arline, food administrator for Wayne County, Georgia, was asked to resign, allowed to contribute \$50 to the Red Cross, and compelled to immediately obtain a license, for conducting a wholesale business without a license.

M. Mazo & Son, wholesale grocers at 619 C street, N. W., Washington, D. C., had their license revoked because of making false reports of stocks on hand and the amount of business done.

The Louisiana State Rice Milling Co. were allowed to donate \$2,129 to the Red Cross; Charles E. Cormier Rice Co., \$1,835; Orme Rice Co., \$614; P. E. Vallee Co., \$397, and J. Trautman & Co., \$317, for having made profit-bearing resales within the trade. All of New Orleans.

The Schroeder-Schnaars Co. of Savannah, Ga., were asked to contribute \$1,000 to the Red Cross and their license was suspended for one week for having sold flour and sugar at excess profits.

Ah Leong, a Chinese merchant in Honolulu, had his business suspended for one week and was allowed to donate \$1,000 to the Red Cross for having violated the "fifty-fifty" rule in selling flour.

Jacob Kulla, a wholesale flour dealer at 2 and 4 Stone street, New York, was given the option of contributing

\$25,000 to the Red Cross or losing his license, for having sold large quantities of flour at excess profits, and violating other rules of the Food Administration.

Benjamin Kaufman & Sons, 178 Stanton street, New York City, were given the option of contributing \$500 to the Red Cross or having their license suspended for at least two weeks, for having unreasonably rejected a carload consignment of buckwheat groats.

E. R. Sherburne & Co. of Boston and L. M. Koritz Co. of Lawrence, Mass., had their license revoked for having accepted bonuses of \$10 per barrel in the sale of sugar, and also having sold large quantities to a small retailer. The Food Administration has forbidden all refiners and distributors from selling P. M. Leavitt Co. of Boston more sugar than was sold to this firm during the previous year because this concern had controlled both of the above concerns.

Oberman & Scherl, 217 West One Hundred and Twenty-fifth street, New York City, were allowed to contribute \$5,000 to the Red Cross for sales of flour at excess profits and without proper substitutes.

The Western Trading Co., a brokerage firm of San Francisco, Cal., has been deprived of its license because it was shown that the company in question was merely serving as a cloak behind which Mr. H. P. Cox, who had already lost his license, could do business.

F. Romeo & Co., importers at 374 Washington street, New York, N. Y., were allowed to contribute \$12,800 to the Red Cross for having sold certain foodstuffs at excess profits.

Soda Fountain Economies.

One cent a day wasted by every soda fountain employee in the country means a loss of \$5,000 a day. Soda-fountain men can save by preventing the drip of sirup from faucets, seeing that perishable soda ingredients do not spoil, and using care in other directions.

Soda fountains now serve many articles of food as well as drinks. The use of cooking oils and butter substitutes is urged instead of butter and lard.

The use of loaf sugar instead of granulated is recommended where patrons help themselves, as in sweetening coffee, because there is no waste by spilling or wetting. Where fresh fruit is served at soda fountains, on the contrary, powdered sugar is best, as it dissolves immediately.

Waste fat skimmed from soups and boiled meat and trimmed from ham and bacon rinds can be made into good soft soap by following the directions given on a can of concentrated lye.

Invert sugar, honey, maple sugar, cane sirup, corn sirup, and molasses are recommended as sweetening materials for various soda-fountain purposes, to save sugar. Invert sugar comes in white and brown colors and is useful for flavoring sirups. Maple sugar is delicious in sundaes and fancy fountain dishes. Honey has a wide range of uses in baking and keeps cakes fresh and moist. Molasses is a suitable sweetener for gingersnaps, molasses cake, and similar dishes.

Care in buying and conserving materials will lead to soda-fountain economies. Purchases of milk should be calculated so that nothing is left to spoil at the end of the day, and portions of sirup should be calculated to prevent serving of too large quantities, as the proper proportion makes the most delicious drink.

Ice-cream manufacturers have had difficulty in getting enough sugar for their products, and are beginning to use invert sugar. It is said to be very much better than granulated for this purpose, as it is sweeter than granulated sugar, causes no waste by sticking to the mixer because it is liquid, and saves time in mixing, as well as produces a better "swell." Figuring granulated sugar at 8 cents a pound the invert sugar costs about 6 cents. Pure sugar is a compound consisting of carbon, 12 parts, hydrogen, 22 parts, and oxygen, 11 parts. It will be seen that the proportion of hydrogen and oxygen are the same as in water. Cane sugar (sucrose) is a double sugar, called disaccharid, and so is milk sugar and malt sugar. Grape and fruit sugars are single sugars, called monosaccharids. By a simple chemical process, called inversion, cane sugar can be split into two other sugars; thus sucrose becomes dextrose, the same thing as grape sugar, and levulose, the same thing as fruit

sugar. This combination is called invert sugar. This inversion can be brought about by heat and dilute acids, by heat, or by fermentation. Certain ferments, known as enzymes as a generic term, but invertase in the process of inverting sugar, will produce the results. All sugar when eaten must be inverted in the stomach by invertase before it can be absorbed by the blood. Thus invert sugar is at once ready for assimilation when it reaches the stomach.

J. D. Lewis Heads United Cereal Mills.

J. D. Lewis, president of the American Cotton Oil Co. and its subsidiary, the N. K. Fairbank Co., has resigned to become president of the United Cereal Mills, of Chicago, Buffalo, and Quincy, Ill.

Watson of New Hampshire Dies.

Irving L. Watson, secretary of the New Hampshire Board of Health, died on April 3, 1918. His successor has not yet been appointed.

Chewing Gum Manufacturers Organize.

To formulate plans for closer co-operation with the Government during the war, chewing gum manufacturers recently met in New York and organized the Association of Chewing Gum Manufacturers and Allied Trades. The association will work for the conservation of the industry, as well as attempt to facilitate the importation and distribution of raw materials.

More than 30 companies are already numbered among the members of the association. The officers elected were: President, Darwin R. James, Jr., president American Chicle Co.; vice-president, B. L. Atwater, vice-president Wm. Wrigley, Jr., Co.; secretary, M. D. Bromberg, secretary American Chicle Co.; treasurer, C. M. Ford, secretary Common Sense Gum Co.; executive committee, J. C. Cox, treasurer Wm. Wrigley, Jr., Co.; F. E. Barbour, secretary Beech-Nut Packing Co.; Geo. F. Hurd, president Autosales Corporation, and Geo. L. Wilson, manager Pulver Co., Inc.

Reserves—Food Insurance

By CHARLES RYAN,
of the U. S. Food Administration.

UNDER no circumstances can the American people look forward to unrestricted use of foodstuffs needed abroad until world shipping has returned to normal and until the Allies are no longer cut off from other markets.

We must continue to conserve, even in the face of a bumper crop. Those who base upon the prospects of around 900,000,000 bushels from the new wheat crop a prophecy that we can lift all restraint in the use of flour, have not seriously studied the present food problem as a world situation.

What applies to wheat applies as well to the other staple foods needed to keep up the strength of the fighting forces and the morale of the civil populations in the Allied countries.

It would be the height of folly to be prodigal in our use of any materials which could strengthen the defense against Germany—even though for a time we have them in abundance.

Never before have we been faced with a more imperative necessity for creating reserve supplies as an insurance against possible disaster or future crop failure. That reserve must be built up on both sides of the Atlantic—and it can be created only from American supplies.

We are entering the new harvest year with our bins scraped clean. Almost literally, when flour from the new wheat comes into general circulation, there will not be a single grain of old wheat left in the country. At the beginning of July our stocks were already at the danger line. We faced a condition seldom seen before in a country whose stores had not been captured or whose fields had not been devastated.

It would be almost suicidal to place ourselves again in such a position, when a subnormal crop could bring us face to face with famine and when we would be utterly helpless to answer any sudden and necessary demand of those who depend upon us for so large a part of their food requirements. Only a large reserve could have saved us this year had our own crop been smaller than anticipated or had any of the Allied countries failed to maintain their program of production.

With virtually no carry-over from last season, we would find ourselves today confronted with a situation which might have broken down the morale of our own people and of those aligned with them in war against Germany, had our fields failed to mature the second largest crop in the history of the nation. With European crops far below those needed to maintain even a highly "dilute" war-bread, our lack of a reserve would have caused suffering among all of the peoples who are bearing the brunt of the war.

With the crop that is now coming to market, we have probably reached the peak of our wartime production. As the fighting forces gradually draw upon our population for additional men and to replace those who may never return, we can look forward only to a steady degeneration of labor. One of our war burdens must of necessity be a constant drain upon our manpower, and a consequent diminution of our farm labor. We can hardly expect to overcome this entirely by improved cultural methods and more intensive production. Under present conditions we cannot afford

to hope that we will be able to maintain the production which has assured us of ample supplies to carry us through to another year.

Aside from a season of shortage, however, military expedience requires the accumulation and maintenance of a reserve supply which would be ample to tide us over any emergency. Our duty to our associates in the war places upon our shoulders the burden of seeing that they are in a position to maintain their rations over a reasonable margin of time should they be cut off from their source of supply.

Should some new form of marine warfare for a time make it impossible to assure safe arrival of transports, a reserve in European warehouses would be the only possible form of insurance against greatly increased want and privation—possibly starvation. There have been times in the past year when none of the Allied countries were in a position to maintain their rations for more than a week on supplies which were stored on their side of the Atlantic. There have been times when the non-arrival of American shipments for more than a week would have brought them to the bottom of their cupboards.

We cannot afford to run the risk of having this occur again. With a big crop in sight, only inordinate greed can discount the necessity for continuing to save and to sacrifice in order that those across the sea may be protected. The great German offensive which began on March 21 of this year again drove home to us the necessity for having in Europe sufficient food supplies to make the Allied nations partially independent of marine transport for their daily existence.

When again we are called upon to rush troops to Europe as fast as they can embark, we must not be faced with the necessity for holding back thousands of tons of shipping in order to prevent starvation on the other side of the Atlantic. When another big drive comes and the United States is called upon to rush reserves to the front, we can be free to make every ship a troop ship only if we have stored in Europe sufficient foodstuffs to maintain the fighters and civil population until the emergency has passed.

With our bumper wheat crop, we are given still another great opportunity for war service.

We showed in the past year that our domestic consumption of wheat could be cut to less than 450,000,000 bushels.

We showed, too, that we could increase by almost unbelievable degrees our exportation of beef, pork and other staples.

With export figures for the past fiscal year in mind and knowing what we may expect from this year's harvests, we now know that for the next eight or nine months the United States can bear practically the entire burden of supplying the food imports of the Allies.

If we do this, we will release between 1,000,000 and 1,500,000 tons of shipping which must now be diverted to other and longer trade routes. Every ship taken from Australian channels and routed to North America virtually equals the construction of two additional vessels, as it can make three times as many trips—and consequently land thrice the tonnage in Europe—as

it did in the longer journey. Every ship taken from South American trade can transport twice the tonnage between Europe and North America.

America has seen very clearly in the past six months the extent to which our war program depends upon shipping. We have learned how serious that shipping situation has become—so serious that the Allies are purchasing in North America goods which could be obtained at one-half or one-third the price in other lands, merely because there are not sufficient ships in the world to justify the diversion of a single vessel which could possibly be kept in the more direct and shorter routes.

If by continued conservation and the creation of reserves we are able to add 1,500,000 tons of shipping for war usages, we will have made it possible to increase still further than was anticipated the number of our troops in France; will be able to give them greater supplies; will be able to furnish still more war material, and at the same time will be able to relieve still further the Allied food stringencies.

Not for many months may we hope to relax and shape our appetites to suit our personal wishes. So far as food is concerned, not before late Fall or early Winter may we expect ship construction to fill the gap that now exists between tonnage needs and vessels available. Not before then may we begin to draw from other markets and again feel even partially free from the burden of responsibility placed upon us by food shortages among all of the nations which have been prosecuting our war against Prussia.

So long as present conditions exist there can be no purely American food problem—any more than there can be a purely American military problem in meeting the German guns. Our problem is the Allies' problem. The food situation is an Allied food situation. Its many changes must be reflected in all of the countries which are banded together against a common foe.

This must be borne in mind when we talk of a bumper wheat crop, of large amounts of pork in storage, of millions of pounds of beef in our warehouses, or of a surplus in any staple food commodity.

It must be remembered that we can no longer consider those supplies as being at our disposal. The right to use them belongs not to us alone, but to the Allied nations. They must be apportioned as world needs dictate.

We have bumper crops. We have large quantities of meat in cold storage. We have other foods accumulating at seaboard warehouses.

But if we squander them, if we allow their presence to tempt us to forego our sacrifices, we will be endangering the cause for which we have already given so much and for which we are pledged to give our utmost.

Surely, there can be no stronger argument for continued conservation and the accumulation of reserve supplies.

Stocks of Cereal Products on Hand, June 1, 1918.

The commercial stocks of wheat reported to the United States Department of Agriculture in a food survey for June 1, 1918, amounted to 17,068,487 bushels. This refers to stocks actually reported and does not represent an estimate of the total commercial stocks of the country. Neither do the figures include stocks on farms on June 1, for which no data are available. According to the statement just issued by the department, these stocks were held by 9,576 firms out of a total of 13,109 submitting reports (the firm

consisting of elevators, warehouses, grain mills and wholesale grain dealers), and were 38.2 per cent of the stocks held by the same firms on June 1, 1917.

The commercial visible supply figures as published by the Chicago Board of Trade show only 1,146,000 bushels of wheat, as against 28,896,000 bushels a year ago, and the Bradstreet figures for June 1 show 4,479,000 bushels, as against 34,876,000 bushels for the same date in 1917. The Board of Trade figures cover commercial holdings in about a score of large cities; the Bradstreet figures cover these holdings and those in certain smaller markets, in all about 50. The food survey figures cover practically all commercial holdings throughout the country. These figures indicate that the stocks of wheat in the primary markets were largely depleted and that the commercial holdings were confined for the most part to the smaller interior points.

The commercial stocks of other cereals on June 1, according to the department's statement, were as follows: Corn 32,834,521 bushels; oats, 42,943,610 bushels; barley, 8,228,164 bushels; and rye, 3,178,105 bushels. These stocks represent the following percentages of the corresponding stocks on June 1, 1917: Corn, 149.5 per cent; oats, 90.6 per cent; barley, 121.7 per cent, and rye, 208.8 per cent.

The commercial stocks of flour and meal as reported in the survey were: Wheat flour, white, 4,433,515 barrels; whole wheat and graham flour, 153,966,000 barrels; rye flour, 1,005,691 barrels; rye meal, 3,612,863 pounds; barley flour, 1,092,310 barrels; barley meal, 1,266,047 pounds; corn flour, 49,701,212 pounds; granulated corn meal, 77,664,450 pounds; other corn meal, 43,238,183 pounds; and buckwheat flour, 3,101,059 pounds. These stocks represent the following percentages of the stocks on hand a year ago: Wheat flour, white, 64.6 per cent; whole wheat and graham flour, 141.7 per cent; rye flour, 419.9 per cent; rye meal, 376.1 per cent; barley meal, 377.9 per cent; granulated corn meal, 220.9 per cent; other corn meal, 227.9 per cent, and buckwheat flour 95.5 per cent. The stocks of corn flour and barley flour on hand June 1, 1917, were so small as to make unnecessary any comparison between them and the present stocks on a percentage basis. The stocks of corn flour on June 1, this year, show an increase over the holdings reported a month earlier, being 49,701,212 pounds as against 24,396,026 pounds.

The following commodities were reported by wholesale grocers, with the results indicated: Beans, 5,770,709 bushels; rice, 61,584,539 pounds; rolled oats, 50,057,798 pounds; canned salmon, 78,615,960 pounds; canned tomatoes, 95,571,689 pounds; canned corn, 47,399,225 pounds, and sugar, 237,191,696 pounds. The stocks of beans, rolled oats, canned salmon and canned tomatoes showed a substantial increase, the present stocks representing the following percentages of those on hand a year ago: Beans, 184.6 per cent; rolled oats, 137.5 per cent; canned salmon, 119.2 per cent, and canned tomatoes, 113.1 per cent. The stocks of sugar, rice and canned corn, on the other hand, were from 11 to 21 per cent smaller than those of last year. Returns from wholesale grocers reporting holdings of condensed milk on June 1, 1918, indicated that the stocks of condensed milk, amounting to 20,375,502 pounds, were 11.7 per cent larger than those last year and that the stocks of evaporated milk, amounting to 73,243,924 pounds, were 177.1, 20.6 per cent larger than on the corresponding date a year ago.

Packaged Produce Must Bear Statement of Quantity

In a memorandum recently sent to shippers of fruits and vegetables, Dr. Carl L. Alsberg, Chief of the Bureau of Chemistry, U. S. Department of Agriculture, stated that during the present season all fruit and vegetables shipped in bags, crates, boxes and hampers, in interstate commerce must be clearly marked with the quantity of the contents. Failure to comply with this ruling will bring about prosecution under the terms of the Food and Drugs Act. The detailed directions are given below.—Editor's Note.

The articles listed below may be marked by either weight or dry measure, or when packed in barrels, in terms of the United States standard barrel and its lawful subdivisions, that is, third, half or three-quarters:

Apples in barrels, boxes, cartons and hampers. Cases or cartons containing graded apples may, if desired, be marked in addition with the number of apples per package. Apricots, prunes and plums in baskets, boxes and cases. (When packed in small open containers inclosed in crates see paragraph relating to small open containers.) Beans (in pod) in baskets, boxes and hampers. Berries and currants in baskets. (When packed in small open containers inclosed in crates see paragraph relating to small open containers.) Cherries in boxes and baskets. (When packed in small open containers inclosed in crates see paragraph relating to small open containers.) Cucumbers in barrels, baskets, hampers, boxes and crates. Containers of graded cucumbers may, if desired, be marked in lieu of weight or dry measure, with the number and length of the cucumbers. Grape fruit in sectional cases. If desired, cases may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure. Grapes in baskets. (When packed in small, open containers inclosed in crates see paragraph relating to small open containers.) Lemons in sectional cases. If desired cases may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure. Okra in baskets, boxes and hampers. Onions in crates, baskets and hampers, and in sacks of uniform quantity of contents. Cases containing graded onions may, if desired, be marked in addition with the number of onions per case. Oranges in sectional cases. If desired cases may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure.

Oranges, satsumas and tangerines in half boxes. If desired, cases may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure. Peaches in boxes, cases, baskets and hampers. Boxes and cases of graded peaches may, if desired, be marked in addition with the number of peaches per package. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers.) Pears in barrels, boxes, baskets and hampers. Peas (in pod) in baskets and hampers. Peppers in barrels, baskets, boxes and hampers. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers.) Potatoes in barrels, crates and hampers, and in sacks of uniform quantity of contents. Quinces in barrels, boxes, baskets and hampers. Squash (Southern) in crates, boxes, baskets and hampers. Tomatoes in boxes, "lugs," and baskets. (When packed in small open containers inclosed in crates or "flats," see next paragraph.)

SMALL OPEN CONTAINERS.

Pending a determination of the question as to

whether the quantity of the contents must be marked on small open containers, inclosed within crates or "flats," in which small open containers are packed apricots, berries, currants, cherries, grapes, peaches, plums, prunes, peppers and tomatoes, and unless public notice of not less than two months be given, the department will not recommend proceedings under the Food and Drugs Act solely upon the ground that such fruits and vegetables in such small containers bear no statement of the quantity of contents. The crates inclosing such containers should, however, be marked with the number of small containers and the quantity of the contents of each.

Also, for the present and until further public notice to the contrary of not less than two months, the department will not recommend proceedings under the Food and Drugs Act solely upon the ground that the quantity of the contents is not marked upon the containers of the following articles, packed as described below. No objection will be interposed by the Department to any trade-marking which is not false or misleading.

Asparagus in boxes and cases; beets with tops, bunched, in drums and hampers; cabbages in crates; cantaloupes and casabas in crates and baskets; carrots with tops, bunched, in drums and hampers; cauliflower in crates and hampers; celery in boxes and crates; eggplant commonly wrapped in paper and packed in crates; kale in barrels, baskets, and hampers; lettuce in barrels, drums, baskets and hampers; onions, with tops, bunched, in drums and hampers; pineapples in crates; radishes, bunched, in drums and hampers; romaine in hampers; spinach in barrels, baskets, and hampers; turnips, with tops, in drums and hampers.

Regulation No. 29 relating to marking the quantity of food in package form should be consulted. Special attention is directed to paragraphs (d) and (e) of that circular, which are as follows: (d) If the quantity of the contents be stated by weight or measure, it shall be marked in terms of the largest unit contained in the package, except that, in the case of an article with respect to which there exists a definite trade custom for marking the quantity of the article in terms of fractional parts of larger units, it may be so marked in accordance with the custom. Common fractions shall be reduced to their lowest terms; decimal fractions shall be preceded by zero and shall be carried out to not more than two places.

(e) Statements of weight shall be in terms of avoirdupois pounds and ounces; statements of liquid measure shall be in terms of the United States gallon of 231 cubic inches and its customary subdivisions, i. e., in gallons, quarts, pints or fluid ounces, and shall express the volume of the liquid at 68 degrees F. (20 degrees C.); and statements of dry measure shall be in terms of the United States standard bushel of 2,150.42 cubic inches and its customary subdivisions, i. e., in bushels, pecks, quarts, or pints; or, in the case of articles in barrels, in terms of the United States

standard barrel and its lawful subdivisions, i. e., third, half, or three-quarters barrel, as fixed by the Act of March 4, 1915 (38 U. S. Stat. L., p. 1186): Provided, That statements of quantity may be in terms of metric weight or measure. Statements of metric weight should be in terms of kilograms or grams. Statements of metric measure should be in terms of liters or centiliters. Other terms of metric weight or measure may be used if it appears that a definite trade custom exists for marking articles with such other terms and the articles are marked in accordance with the custom.

Sugar Distribution Chief.

The Food Administration issues the following:

George A. Zabriskie, in charge of retail and wholesale flour distribution for the United States Food Administration, has been appointed to take charge of wholesale and retail sugar distribution and will perform both offices from now on as part of the Distribution Division of the Food Administration.

Mr. Zabriskie will have charge of the Washington office relative to the new curtailment in sugar distribution.

Recent Connecticut Rulings.

EGG SUBSTITUTES.

1. "Powdered Egg" or Egg Powder is held to mean only powdered, desiccated or dried eggs, exclusive of the shell.

2. "Egg Substitute Powder" is held to mean an article reasonably equivalent in substance and quality to whole egg material.

3. Any article which purports to replace wholly or in part whole egg or whole egg material, whether for baking or other purposes, is held to be an egg substitute.

4. Egg substitutes are held to be food compounds or imitations and are subject to regulations already obtaining for such articles: Regulations 17, 20 and 21 further providing that (a) they shall bear a distinctive name; (b) the word egg shall form neither the whole or any part of such a name, nor shall the label bear any design or device suggesting egg or egg material unless whole egg material comprises a preponderating part of the article; (c) the use of artificial color in any egg substitute not conforming to Paragraph 2 of this Regulation is held to be an adulteration. (*Connecticut Regulation No. 47.*)

CONDENSED MILK, EVAPORATED MILK, CONCENTRATED MILK.

Condensed milk, evaporated milk, concentrated milk, is the product resulting from the evaporation of a considerable portion of the water from the whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within 15 days before and 10 days after calving, and contains, all tolerances being allowed for, not less than twenty-five and five-tenths per cent (25.5%) of total solids and not less than seven and eight-tenths per cent (7.8%) of milk fat. (F. I. D. 158.) (*Connecticut Regulation No. 44.*)

SWEETENED CONDENSED MILK, CONDENSED SKIMMED MILK, SWEETENED CONDENSED SKIMMED MILK, DRIED MILK, DRIED SKIMMED MILK AND MALTED MILK.

Sweetened condensed milk, sweetened evaporated milk, sweetened concentrated milk, is the product re-

sulting from the evaporation of a considerable portion of the water from the whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within 15 days before and ten days after calving, to which sugar (sucrose) has been added. It contains, all tolerances being allowed for, not less than twenty-eight per cent (28%) of total milk solids, and not less than eight per cent (8%) of milk fat.

Condensed skimmed milk, evaporated skimmed milk, concentrated skimmed milk, is the product resulting from the evaporation of a considerable portion of the water from skimmed milk, and contains, all tolerances being allowed for, not less than twenty per cent (20%) of milk solids.

Sweetened condensed skimmed milk, sweetened evaporated skimmed milk, sweetened concentrated skimmed milk, is the product resulting from the evaporation of a considerable portion of the water from skimmed milk to which sugar (sucrose) has been added. It contains, all tolerances being allowed for, not less than twenty-eight per cent (28%) of milk solids.

Dried milk is the product resulting from the removal of water from milk and contains, all tolerances allowed for, not less than twenty-six per cent (26%) of milk fat, and not more than five per cent (5%) of moisture.

Dried skimmed milk is the product resulting from the removal of water from skimmed milk and contains, all tolerances being allowed for, not more than five per cent (5%) of moisture.

Malted milk is the product made by combining whole milk with the liquid separated from the mash of ground barley malt and wheat flour, with or without the addition of sodium chloride, sodium bicarbonate and potassium bicarbonate in such a manner as to secure the full enzymic action of the malt extract and by removing water. The resulting product contains not less than seven and one-half per cent (7.5%) of butter fat and not more than three and one-half per cent (3.5%) of moisture. (F. I. D. 170.) (*Connecticut Regulation No. 45.*)

GLUTEN PRODUCTS AND "DIABETIC" FOOD.

Ground gluten is a clean, sound product made from wheat flour by the almost complete removal of starch and contains not more than ten per cent (10%) of moisture, and, calculated on the water-free basis, not less than fourteen and two-tenths per cent (14.2%) of nitrogen, not more than fifteen per cent (15%) of nitrogen-free extract (using the protein factor 5.7) and not more than five and five-tenths per cent (5.5%) of starch (as determined by the diastase method.)

Gluten flour is the clean, sound product made from wheat flour by the removal of a large part of the starch and contains not more than ten per cent (10%) of moisture and, calculated on the water-free basis, not less than seven and one-tenth per cent (7.1%) of nitrogen, not more than fifty-six per cent (56%) of nitrogen-free extract (using the protein factor 5.7) and not more than forty-four per cent (44%) of starch (as determined by the diastase method.)

Gluten flour, self-raising, is a gluten flour containing not more than ten per cent (10%) of moisture and leavening agents with or without salt.

"Diabetic" food. Although most foods may be suitable under certain conditions for the use of persons suffering from diabetes, the term "diabetic" as applied to food indicates a considerable lessening of the car-

bohydrates found in ordinary products of the same class, and this belief is fostered by many manufacturers on their labels and in their advertising literature.

A "diabetic" food contains not more than half as much glycogenic carbohydrates as the normal food of

the same class. Any statement on the label which gives the impression that any single food in unlimited quantity is suitable for the diabetic is false and misleading. (F. I. D. 160.) (*Connecticut Regulation No. 46.*)

The Wheat Standards and Their Application *

By GEORGE LIVINGSTON,

in Charge Federal Grain Supervision, Bureau of Markets, U. S. Department of Agriculture.

THE far-reaching influence of the wheat standards and their application was called directly to the attention of the entire grain industry when, on August 30, 1917, the President publicly announced his adoption of the price for wheat recommended by the Fair Price Committee. This price was based upon No. 1 Northern Spring of the Federal standards. Since that time many people have given serious consideration to the question of wheat standards in general, and to the official standards which became effective on July 1 for winter wheat and on August 1, 1917, for spring wheat. So many varying opinions and convictions concerning the official standards were presented to the department that steps were taken to provide an opportunity for all interested persons to present their opinions and recommendations with a view of revising the standards, if necessary, to meet more fully the needs of the country.

EVIDENCE CONSIDERED IN REVISING STANDARDS.

A most careful and painstaking consideration by the Department of Agriculture of all available evidence relating to the subject of wheat standards resulted in the revised standards which were promulgated April 13, and which become effective July 15, 1918. This evidence may be grouped into three classes, namely: Facts collected by the department during ten years of investigation of all phases of the subject; evidence developed from the past year's experience in supervising the application of the official standards; and evidence presented by mail and at some 20 public hearings held throughout the United States.

TEN YEARS OF INVESTIGATION.

The facts collected by the department during the ten years of systematic study of the subject of wheat grading cover every step in the marketing of wheat from the time it leaves the wheat field until it reaches the consumer. These facts resulted from an examination of a large number of samples—samples collected from the thrashing machine, from the farmer's wagon at the country elevator, from the car upon its arrival at the central market; samples taken before and after grain had passed through terminal elevators and mixing houses; samples taken from the grain as it arrived at the mill and from the mill stream on its way to the rolls; samples taken as the grain went aboard vessels at seaboard markets and as it was discharged from the vessels in foreign ports. Upon information obtained by examination of thousands of such samples representing, as they do, wheat at every stage of marketing, supplemented by personal study of the inspection procedure in the principal markets of the United States, the department based the present standards for wheat. It is apparent, therefore, that in securing the

information upon which the standards were based no single interest has been favored at the expense of any other.

PAST YEAR'S EXPERIENCE IN SUPERVISION.

The past year's experience in supervising the application of these standards in all parts of the United States, in the course of which thousands of samples have been given careful study, has resulted in additional information on the subject of wheat grading and suggested a number of desirable changes which have been incorporated in the amended standards.

RECOMMENDATIONS RECEIVED AT HEARINGS AND BY MAIL.

Consideration of the suggestions and recommendations received by the department through the mails and at public hearings reveals a wide diversity of opinion with respect to what are desirable wheat standards. Recommendations ranged from standards with grade requirements so lenient as to permit from 85 to 90 per cent of a normal crop to meet the requirements of grade No. 1, to standards with severe grade requirements involving numerous special and refined limitations, which would permit only a very small portion of the crop in the first grade. A most careful and impartial study of all recommendations received, having in mind the needs and desires of the entire country, indicated without question of doubt that the grain industry as a whole desired standards which in all essential features conform to standards suggested by the information obtained by the department from investigation and the supervision of grain inspection.

The United States grain standards act authorizes the Secretary of Agriculture to fix standards for quality and condition of grain. Standards which would permit of 85 to 90 per cent of a normal crop of wheat to grade No. 1 would serve no useful purpose to the grain industry in differentiating as to quality and condition; nor would standards with severe grade requirements involving numerous special and refined limitations be practical of application. The standards as amended retain the principles of grading so that quality and condition can be properly differentiated and at the same time so moderated and simplified as to be practical of application by any who will give thoughtful consideration to their requirements. The principal factors as to quality and condition in every commercial system of wheat grading have been test weight, moisture, color and texture, mixtures of other wheats and the quantity and quality of foreign material. In the original standards for wheat fixed under the United States grain standards act the factor limits were so adjusted as to establish premium grades, grades for average quality and condition, and grades for wheat below the average. The past year's experience indicates that the standards fully accomplished

*Address delivered before the Twenty-first Annual Convention of the Oklahoma Grain Dealers and Millers Association, Oklahoma City, Okla., May 22-23, 1918. Published as Service and Regulatory Announcement, No. 35, Bureau of Markets.

this purpose. Nevertheless, dissatisfaction with the standards developed. The evidence submitted, however, indicates that a considerable part of the dissatisfaction was based upon a desire that most of the wheat should grade No. 1, thereby commanding the basic price established by the President.

The department arrived at its conclusions, which have been incorporated in the revised standards, only after careful and unbiased consideration of all the evidence resulting from investigations, from experience in supervision and from voluminous suggestions and recommendations received by mail and at public hearings.

SUMMARY OF CHANGES.

The following changes have been incorporated in the revised standards:

DEFINITION OF TERMS.

Wheat.—The definition of wheat has been changed so as to permit wheat when free from dockage to contain as much as 10 per cent of other grains. Under the present standards only 6 per cent of other grains is permitted. The definition was further changed to exclude emmer, spelt and einkorn.

Dockage.—The definition of dockage has been changed so as expressly to require rescreening or recleaning in order to recover as much cracked wheat as practicable. This change should obviate much of the difficulty experienced in ascertaining the status of cracked wheat in the determination of dockage. Dockage is to be expressed in terms of whole per centum instead of half percentum. This change means that wheat may contain up to 1 per cent of dockage before a statement of dockage is made a part of the grade designation, and fractions are to be disregarded.

Foreign Material.—The term "inseparable foreign material" has been replaced by the more accurate designation "foreign material other than dockage." Wild pea, corn cockle, darnel and wild rose have been placed on the same basis as other foreign material except cereal grains, i. e., no special discrimination is made against such weed seeds.

Cereal Grains.—Rye and barley as well as other cereal grains are now permitted in each grade in larger amounts, in addition to other foreign material.

Garlicky Wheat.—The word "garlicky" is required as a part of the grade designation of all wheat which contains as much as one bulblet of garlic or onions in 1,000 grams or which has an unmistakable odor of garlic or wild onions. Accordingly, the subclass Soft Red has been dropped and all garlicky wheat is graded in the same manner as other wheat.

Smutty Wheat.—The number of smut balls permitted before the word "smutty" is required to be added to the grade designation has been increased from 1 to 2 balls in 50 grams of wheat.

CLASSES AND SUBCLASSES.

Class I. Hard Red Spring.—In this class the subclass Red Spring Humpback has been eliminated and the definitions of the other subclasses changed to include wheat that formerly came within the requirements of Red Spring Humpback. However, the grades No. 1 Dark Northern Spring and No. 1 Northern Spring may not contain more than 5 per cent of wheat of the variety Humpback.

The minimum requirement of dark, hard and vitreous kernels of the subclass Dark Northern Spring has been reduced from 85 per cent to 75 per cent. This permits wheat containing between 75 per cent and 85 per cent of dark, hard and vitreous kernels, which for-

merly would have been classed Northern Spring, to be classed as Dark Northern Spring.

Class II. Durum.—The name of this class has been changed from "Common and Red Durum" to "Durum."

Class III. Hard Red Winter.—The minimum requirement of dark, hard and vitreous kernels of the subclass Dark Hard Winter has been reduced from 90 per cent to 80 per cent. This permits wheat containing between 80 per cent and 90 per cent of dark, hard and vitreous kernels, which formerly would have been classed Hard Winter, to be classed as Dark Hard Winter.

Class IV. Soft Red Winter.—In this class the subclass Soft Red has been eliminated, and garlicky wheat is graded as previously described.

Class V. Common White.—For the purpose of distinguishing between Hard White wheat and Soft White wheat, the revised standards specify that Hard White wheat in order to be graded Hard must contain 75 per cent of hard (not soft and chalky) kernels. Formerly the distinction between Hard and Soft White wheat was that Hard White wheat could not contain more than 20 per cent of soft and chalky kernels.

GRADE REQUIREMENTS.

Changes have been made with a view, primarily, to simplification of the standards and a moderation of grade requirements. This is true especially with respect to the factors moisture and admixture of wheat of other classes. With reference to the latter, grade No. 1 permits 5 per cent of wheat of other classes, except in certain admixtures which do not occur frequently and which are especially detrimental. Likewise, wheat will not be graded lower than No. 2 on account of the presence of wheat of other classes, except where the admixture is decidedly undesirable and occurs very rarely on the farm. These decidedly undesirable admixtures may cause wheat to be graded No. 3 but never lower.

Moisture.—The Hard Red Spring wheat of the crops of 1911 to 1916, inclusive, with respect to moisture content, was sufficiently dry to permit 50.7 per cent to grade No. 1 and 72.3 per cent to grade No. 2 or better, under the present standards. The average moisture content of spring wheat for these years was 13.4 per cent. The amount of moisture allowed by the present standards in grade No. 1 is 13.5 per cent. The revised standards increased the percentage to 14. Based upon past crops, this increase would permit 63.2 per cent, an increase of 12.5 per cent, to grade No. 1 with respect to moisture.

In the case of Hard Winter wheats, the records of the department show that of past crops 50 per cent or more would grade No. 1, with respect to moisture, under present standards. Under the revised standards, which increase the moisture limit one-half of 1 per cent, a still larger proportion of the wheat crop should meet the moisture requirements of grade No. 1.

The changes in the percentage of moisture allowed in the various grades in the revised standards are as follows:

Hard Red Spring and Durum:

No. 1 increased from 13.5 to 14.0 per cent.

No. 2 no change, remains at 14.5 per cent.

No. 3 increased from 14.5 to 15.0 per cent.

No. 4 increased from 15.5 to 16.0 per cent.

No. 5 increased from 15.5 to 16.0 per cent.

All other classes:

No. 1 increased from 13 to 13.5.

No. 2 increased from 13 to 14.0.

No. 3 increased from 14 to 14.5.

No. 4 increased from 14 to 15.5.

No. 5 increased from 15 to 15.5.

Admixtures of Other Wheats.—A radical change has been made in the amounts of other wheats permitted in the higher grades. The changes are as follows:

No. 1 changed from 2 to 5 per cent.

No. 2 changed from 4 to 10 per cent.

No. 3 changed from 5 to 10 per cent.

No. 4 no change, remains at 10 per cent.

No. 5 no change, remains at 10 per cent.

Only in rare cases will wheat grade lower than No. 2 on account of mixture of other wheats. Therefore a much smaller proportion of the crop should be graded down on account of this factor than has been the case heretofore.

Weight per Bushel.—The figures for the six years prior to 1917 for practically all wheats during these years show that an average of 37.5 per cent weighed 59 pounds or more per bushel. Under the present standards the test weight required for grades No. 2 of the classes Durum, Hard Red Winter, and Soft Red Winter, except the subclass Red Walla, and for No. 1 of the class Hard Red Spring, is 59 pounds, so that 37.5 per cent of these wheats, on the factor test weight, would have received the grade of No. 2 or better. Under the revised standards, these same grades have a test weight requirement of only 58 pounds. It is to be expected, therefore, that a materially increased proportion of the crop should fall within the grades mentioned so far as test weight is the determining factor.

With respect to the test weight per bushel, the changes by classes for each grade are as follows:

Hard Red Spring, Class I:

No. 1 reduced from 59 to 58 pounds.

No. 2 no change, remains at 57 pounds.

No. 3 no change, remains at 55 pounds.

No. 4 no change, remains at 53 pounds.

No. 5 reduced from 51 to 50 pounds.

Durum and Hard Red Winter, Classes II and III:

No. 1 reduced from 61 to 60.

No. 2 reduced from 59 to 58.

No. 3 reduced from 57 to 56.

No. 4 reduced from 55 to 54.

No. 5 reduced from 53 to 51.

Soft Red Winter, Class IV:

Red Winter—

No. 1 reduced from 61 to 60.

No. 2 reduced from 59 to 58.

No. 3 reduced from 57 to 56.

No. 4 reduced from 55 to 54.

No. 5 reduced from 53 to 51.

Red Walla—

No. 1 reduced from 60 to 58.

No. 2 reduced from 58 to 56.

No. 3 reduced from 56 to 54.

No. 4 reduced from 54 to 52.

No. 5 reduced from 52 to 49.

Common White and White Club:

No. 1 no change, remains at 60.

No. 2 no change, remains at 58.

No. 3 no change, remains at 56.

No. 4 no change, remains at 54.

No. 5 reduced from 52 to 51.

Damaged Kernels and Heat-Damaged Kernels.—The changes with respect to the factors "damaged kernels" and "heat-damaged kernels" affect all classes

alike and are shown by grade as follows:

Damaged—all classes:

No. 1 increased from 1 per cent to 2 per cent.

No. 2 no change, remains at 4 per cent.

No. 3 no change, remains at 7 per cent.

No. 4 no change, remains at 10 per cent.

No. 5 no change, remains at 15 per cent.

Heat damaged—all classes:

No. 1 allowance of 0.1 per cent, formerly none allowed.

No. 2 increased from 0.1 per cent to 0.2 per cent.

No. 3 no change, remains at 0.5 per cent.

No. 4 no change, remains at 1 per cent.

No. 5 no change, remains at 3 per cent.

APPLICATION OF THE STANDARDS.

All branches of the grain industry are vitally interested in the grades as originally promulgated and as revised, and in their uniform and impartial application. The department, having been charged with the responsibility of putting them into effect, is impartially discharging that responsibility with vigilance and increasing efficiency.

VARIATIONS IN GRADE.

Prior to the establishment of the standards under the United States grain standards act there was little uniformity either in the standards in use or in their application by the various boards of trade, chambers of commerce, and other similar organizations. Grain which would be given a certain grade in one market might be given an entirely different grade according to entirely different standards in some other market. Under the standards then in use a uniform price basis applicable to the entire United States for a particular class of grain of a given quality was practically impossible. It is true that under the Federal standards, and with Federal supervision, variations may and do occur in the grade assigned a particular lot of grain by two or more licensed inspectors. Such variations in grade are not due necessarily to the inefficiency of the licensed inspectors, but may be caused by differences in samples upon which inspectors based the grade. Variations of this kind are certain to occur regardless of the standards under which the grain is graded. However, variations in grade, as determined by two or more inspectors, are not nearly so frequent under uniform standards and Federal supervision as they were under the various standards in vogue prior to the establishment of Federal standards.

The fact that variations in grading at different markets occurred frequently, prior to the time the United States grain standards act became effective, together with the fact that it was realized that some variation was certain to occur in grading under the act, caused Congress to provide ways and means whereby parties to a transaction involving such variations could appeal to the Secretary of Agriculture for the determination of the true grade of the grain. The Department of Agriculture is lending every effort to secure a uniform application of the standards established under the act and, through the co-operation of producers and the grain trade, marked progress in this direction has been made since the standards for corn and wheat became effective.

INSPECTION EFFICIENCY.

Steps have been taken to bring about, as rapidly as possible, uniform inspection of grain. A corps of traveling supervisors has been appointed. Their duties, among others, are: to keep in touch with conditions and practices in the terminal markets and inspect-

tion points of a designated territory; to handle complaints concerning variations in grading between markets; and to assist the supervisors and inspectors in arriving at uniform practices. Efficiency records are compiled from which it will be possible to ascertain the percentage of accuracy attained by each inspector and, in case of error, the factor or factors in which he is least efficient. It will be possible also to compare the efficiency of one market, taking the inspector's records as a basis, with the efficiency of other markets; also, if a market lacks in efficiency, those lines along which it seems to be least efficient. It is believed that the work of the traveling supervisors and the constant checking up of inspections of licensed inspectors will have a very beneficial effect in establishing uniformity in applying the standards. It must be remembered that the grain trade and inspectors have had a very short time within which to adjust themselves to Federal grain supervision. Likewise, many new problems must be met by the department. Even in peace times and with normal conditions prevailing the greatest benefits could not have been attained in the short time that has elapsed. Obviously the task has been intensified by the abnormal conditions under which the entire grain industry and the department as well have been working.

FEDERAL GRAIN SUPERVISION IN WAR TIMES.

The war has brought with it a readjustment of commercial conditions, involving, in the grain business, radical departures from established customs and practices. The Food Administration Grain Corporation has entered the field of grain marketing. Transactions involving the purchase of wheat controlled by this corporation are based upon the standards established under the United States grain standards act. Because of the abnormal conditions under which grain is marketed today, there is much confusion in the minds of both producers and grain dealers with respect to what share, if any, the United States grain standards act and the standards established thereunder have in determining whether the producer shall receive a just price for his products.

RELATION OF PRICE TO GRADE.

Under normal marketing conditions a great number of grades is neither desirable nor necessary. Under normal marketing conditions standards are desired in which the grade requirements of each of the grades are sufficiently broad to permit a certain range in quality and condition, and consequently in actual value, of the grain falling within any one of the grades. Prior to the establishment of standards under the United States grain standards act, grain was frequently classed within one grade which sold at a range of 4 or 5 cents and occasionally as much as 17 cents per bushel. Whenever a definite price is fixed for all grain coming within the limits of any one grade, assuming that it represents the average value of the grade, the grain meeting the requirements of the upper limit of the grade sells for less than its actual value, while that which falls at the bottom of the grade sells for more than its actual value. Under fixed prices this condition will maintain in any system of commercial grading. If grades were to be fixed for the purpose of classifying all grain of exactly the same value into a single grade, a great number of such grades would be required. In fact, a grade would have to be provided for every possible combination of factors having a value different from that of any other combination. Such a system of grain grading would not

be applicable to commercial grain marketing because of the difficulties in determining accurately each factor involved in arriving at the value of the grain. Under normal marketing conditions competitive bidding of purchasers for grain insures prices based on actual worth for a given purpose. Grain which may receive a low grade because of some factor which is not objectionable to a purchaser who desires to use it for a given purpose may sell at a premium over other grain of the same grade, and sometimes may sell for a price equal to that paid for higher grades. This condition cannot maintain under any system of commercial grading when a fixed price is established for all grain falling within any one grade.

FEDERAL GRAIN SUPERVISION IN TIME OF PEACE.

The establishment of peace will bring with it new marketing conditions in the grain business and a consequent readjustment of commercial practices. The producer, the grain dealer, and the manufacturer will have opened to them again a competitive market and a broad field for commercial activities. The period of readjustment will be attended by many uncertain and perplexing problems in production, marketing and distribution, which must be met. During the period of transition from a war to a peace basis, Federal grain supervision should exert a stabilizing influence in all branches of the grain industry.

The producer of grain should be paid for his product in exact proportion to its value. The farmer who produces grain of good quality should receive a price commensurate with its grade and value. He should not be obliged to sell grain of good quality at a comparatively low price in order to protect the purchaser who receives from other farmers at the same price grain of poor quality. Federal grain supervision should protect the producer and country grain dealer from unjust discounts and provide for deserving premiums. It should add stimulus to good farming methods in the form of premiums paid for a superior product.

The country grain dealer, with definite standards uniformly applied to guide him in making purchases and sales, should render a service to the community at less cost than before the establishment of Federal standards. The commission merchant and the broker likewise should be able to render more efficient service to their patrons because of improved terminal market conditions which should result from uniform application of definite and fixed standards. The miller and manufacturer should know definitely what quality of grain may be delivered to them and as a result should be able to operate their industries on a narrow margin of cost.

No longer may inspectors change standards at will, nor exercise leniency in grading in order to maintain the good will of interested parties. Neither may one set of standards at terminal markets be used for grading country receipts and another set of standards for grading terminal sales and outbound shipments.

Federal standards for grain, uniformly applied throughout the United States, should encourage honest competition, eliminate many abuses and unfair practices, provide a uniform basis for the determination of price at country points and at terminal markets, and generally establish confidence and security in all branches of the grain industry to the mutual benefit of the producer, the grain dealer and the consumer.

The Bureau of Markets asks for and earnestly desires to receive the full co-operation of all branches of the grain industry in carrying on this important work.

APPENDIX A.

Sections 15 to 20, inclusive, of the official grain standards of the United States for wheat, tabulated and abridged. (See Note.)

[The numbered footnotes below must be read in connection with the tabulation.]

Grade No.	Minimum limits of test weight per bushel.				Moisture.		Maximum limits of—		Foreign material other than dockage.	
	Class hard red spring.	Classes durum, hard red winter, common white, and club, and subclass red winter.	Subclass red walla.	Lbs.	Classes hard red spring and durum.	Pct.	Classes hard red winter, soft red winter, common white, and white club.	Pct.	Total.	Pct.
1.....	58	60	58	14.0	13.5	0.1	14.0	0.2	5.0	10
2.....	57	58	56	14.5	14.0	0.2	14.5	0.3	5.0	10
3.....	55	56	54	15.0	14.5	0.3	15.0	0.5	5.0	10
4.....	53	54	52	16.0	15.5	1.0	16.0	1.0	5.0	10
5.....	50	51	49	16.0	15.5	15	16.0	3.0	5.0	10
Sample* ..	..	..	..	..	..	..	..	..	..	..

*Sample Grade—Shall be wheat of the appropriate subclass which does not come within the requirements of any of the grades from No. 1 to No. 5, inclusive, or which has any commercially objectionable foreign odor, except of smut, garlic, or wild onions, or is very sour, or is heating, hot, infested with live weevils or other insects injurious to stored grain, or is otherwise of distinctly low quality, or contains small, inseparable stones or cinders.

- (1) The wheat in grade No. 1 shall be bright.
- (2) The wheat in grades Nos. 1 to 4, inclusive, shall be cool and sweet.
- (3) The wheat in grade No. 5 shall be cool, but may be musty or slightly sour.
- (4) The wheat in grade No. 1 dark northern spring and grade No. 1 northern spring may contain not more than 5 per centum of the hard red spring wheat variety humpback.
- (5) The wheat in grade No. 1 amber durum and grade No. 1 durum may contain not more than 5 per centum of the durum wheat variety red durum.
- (6) For each of the subclasses of the class durum, grade No. 1 and grade No. 2 may contain not more than 2 per centum and 5 per centum, respectively, of soft red winter, common white, and white club wheat, either singly or in any combination.
- (7) For each of the subclasses of the classes hard red spring and hard red winter, grade No. 1 and grade No. 2 may contain not more than 2 per centum and 5 per centum, respectively, of common white, white club, and durum wheat, either singly or in any combination.
- (8) For each of the subclasses soft red winter, common white, and white club, grade No. 1 and grade No. 2 may contain not more than 2 per centum and 3 per centum, respectively, of durum wheat.

NOTE—For grades for mixed wheat, treated wheat, garlicy wheat, and smutty wheat see sections Nos. 21, 22, 23, and 24, respectively, of the official grain standards of the United States for wheat.

The above tabulation does not constitute in whole the official grain standards of the United States for wheat.

APPENDIX B.

Section 9 of the official grain standards of the United States for shelled corn, tabulated and abridged. (See Note.)

Grade No.	Minimum test weight per bushel. Lbs.	Maximum limits of—		Foreign material and cracked corn. Pct.	Total. Pct.	Heat damage. Pct.
		Moisture. Pct.	Damaged kernels. Pct.			
1.....	55	14.0	..	..	..	0.0
2.....	53	15.5	..	..	..	0.1
3.....	51	17.5	..	..	..	0.3
4.....	49	19.5	..	..	..	0.5
5.....	47	21.5	..	10	..	1.0
6.....	44	23.0	..	15	..	3.0
Sample* ..	..	..	..	..	..	..

*Sample Grade—Shall be white corn, or yellow corn, or mixed corn, respectively, which does not come within the requirements of any of the grades from No. 1 to No. 6, inclusive, or which has any commercially objectionable foreign odor, or is heating, hot, infested with live weevils or other insects injurious to stored grain, or is otherwise of distinctly low quality.

- (1) The corn in grades Nos. 1 to 5, inclusive, shall be cool and sweet.
- (2) The corn in grade No. 6 shall be cool but may be musty or sour.

NOTE—The above tabulation does not constitute in whole the official grain standards of the United States for shelled corn.

United States Department of Agriculture

Office of the Secretary, Washington, D. C.
FOOD INSPECTION DECISION 176.

EVAPORATED APPLES.

The following definition and standard for evaporated apples was adopted by the Joint Committee on Definitions and Standards, August 7, 1916, and was approved by the Association of American Dairy, Food and Drug Officials, August 10, 1916, and by the Association of Official Agricultural Chemists, November 22, 1916:

"Evaporated apples are evaporated fruit made from peeled, cored and sliced apples, and contain not more than twenty-four per cent (24%) of moisture as determined by the official method of the Association of Official Agricultural Chemists."

The foregoing definition and standard is adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

D. F. HOUSTON,

Secretary of Agriculture.

Washington, D. C., May 28, 1918.

Milk Is Prevention Against Pellagra.

A recent issue of the *U. S. Public Health Bulletin* contains an interesting article on pellagra by Dr. Jos. Goldberger of the U. S. Public Health Service.

In his article he makes the rather startling statement that in nearly all of the southern states pellagra is one of the foremost causes of death. Citing the figures for 1916 he says, "This disease ranked fourth in Mississippi, third in Alabama and second in South Carolina. In the same year it caused the death of 677 people in Alabama, 840 in Mississippi, 467 in North Carolina, 627 in South Carolina, 607 in Tennessee and 452 in Texas, a total of approximately 3,700 deaths for these six states alone."

After commenting upon the apparently rapid increase of the disease, especially throughout the southern states, the doctor calls attention to the important fact that it has been definitely determined that it is not a contagious or "catching" disease. He makes it very clear that it is a disease due to improper diet. And as a result of studies made he says, "That the suspicion of pellagra may with confidence be dismissed in anyone who is known to be a habitual milk drinker and meat eater."

So far as has been determined the cause lies in an improperly balanced ration. Observations made in the numerous public institutions, such as asylums, showed that the disease was present among the inmates where the allowance of lean meat and milk had been low, while nurses and helpers, who had had a fairly liberal allowance of these articles of diet, were not afflicted with the disease at all. It was also shown that even in families where the diet did not exclude milk, meat or eggs, if people did not eat of these articles, but preferred the cereals and starchy foods, they were still liable to contract the disease.

He also asserts that the most important single food in balancing a diet and preventing and curing pellagra was milk. In addition to the meat, milk and egg foods, it is suggested that generous helpings of green vegetables, such as cabbage, collards, turnips, green spinach and string beans and fruits should also be included.

RETAIL PRICES

Average Price per Pound	Average Price per 100 Calories		Lima, Ohio, Typical Small Town	Augusta, Me.	Concord, N. H.	Providence, R. I.	Buffalo, N. Y.	New York, N. Y.	Trenton, N. J.	Burlington, Vt.	Pittsburgh, Pa.	Washington, D. C.	Wheeling, W. Va.	Cincinnati, Ohio
CEREAL PRODUCTS														
6.4	.40	Wheat Flour, War Std., 49-lb. bag.....	330	350	350	330	292	340	320	330	310	315	310	320
7.5	.47	Rye Flour, Std., 24½-lb. bag.....	200	200	200	165	172	170	196	220	165	170	180	150
7.1	.43	Graham Flour, 10-lb. bag.....	70	80	75	75	70	70	70	80	70	70	70	70
11.3	.70	Corn Starch, lb.	12½	11	12	11	10	9	10	12	7	11	12	12
7.6	.48	Corn Flour, 5-lb. bag.....	40	40	45	35	40	40	40	40	35	35	37½	35
6.8	.43	Corn Meal, lb.....	6	7	7	6	7	7	7	8	6	6	7	6
8.0	.48	Barley Flour, lb.....	8	8	9	8	8	8	10	8	7½	.....	7½	7
9.3	.52	Oatmeal, lb.	12½	9	9	9	8	7	7½	8	7	8	8½	8
8.7	.48	Oats, Rolled, bulk, lb.....	9	8	9	9	8	7	7½	8	6	.....	8½	8
13.0	.79	Rice Flour, lb.	15	15	15	12	.....	12	14	20	12	13	15	12½
11.3	.72	Buckwheat Flour, lb.	10	12	12	.....	9	9	9	10	.....	10	10	.....
9.1	.57	Hominy Grits, lb.	11	10	10	8	10	7	7½	12	9	7	10	7½
10.4	.57	Quaker Oats, 20 oz.....	13	12½	12	12	13	10	11	12	12	13	12	12
13.0	.82	Rice, fancy head, lb.....	15	12½	13	12	14	11	13	15	12	13	15	12
12.8	.79	Barley, pearled, lb.....	15	12	15	11	7	8	8½	15	8	15	8½	10
9.8	.83	Bread, lb.	10	10	10	10	10	10	9	10	8	10	10	10
22.2	1.17	Crackers, Graham, lb.....	20	22	28	22	22	20	22	25	14	25	22	20
22.7	1.18	Crackers, Oatmeal, lb.	20	28	28	22	22	20	22	25	14	30	22	.....
14.2	.87	Macaroni, lb.	15	20	15	15	14	16	14	20	9	15	14	15
SUGAR AND SIRUP														
9.3	.51	Granulated Sugar, lb.	9½	10	9½	9¼	9	9	8½	9	9	8½	9	9
8.6	.60	Corn Sirup, 10-lb. pail.....	90	85	75	.....	85	100	.....	85	.....	73	75	75
29.7	2.00	Comb Honey, lb.	25	.....	40	40	.....	30	.....	35	20	30	40	35
MISCELLANEOUS														
32.2	1.43	Cocoa, bulk, lb.	35	.....	35	30	23	20	25	.....	25	.....	30	25
27.4	4.57	Eggs, fresh gathered, firsts, doz.....	40	50	55	60	54	60	60	45	45	45	45	45
5.7	1.84	Milk, qt.	12	12	12	14	13	10	14	.....	13	14	14	13
34.0	1.63	Cheese, American, cheddar, lb.....	35	33½	35	36	38	35	33	35	38	35	35	35
FATS														
54.2	2.29	Bacon, sliced, lb.....	60	50	55	52	55	50	55	60	55	55	50	50
51.6	1.48	Creamery Butter, fancy, lb.....	53	55	55	58	56	51	55	54	49	50	52	52
32.5	.79	Pure Leaf Lard, lb.....	35	35	35	36	33	32	30	35	29	32	32	30
34.1	1.00	Oleomargarine, uncolored, lb.....	35	35	35	35	35	32	30	34	32	32	38	35
34.4	.98	Nut Margarine, uncolored, lb.....	35	35	35	32	31	30	30	34	33	32	35	33
98.6	2.47	Italian or Spanish Olive Oil, qt. tin.....	200	200	175	210	160	185	220	200	225	175	200	200
37.3	.93	Cottonseed Oil, qt. tin.....	85	80	75	75	75	60	80	.....	85	65	.....	.....
36.6	.92	Corn Oil, qt. tin.....	75	80	75	75	75	75	75	75	70	70	70	50
42.9	1.07	Peanut Oil, qt. tin.....	75	.....	.....	.....	.....	75	.....	.....	125	.....	.....	.....
28.6	1.04	Peanut Butter, lb.....	30	28	30	40	30	30	22	30	23	30	30	30
FRUITS														
20.3	1.54	Evaporated Apples, lb.....	25	22½	30	25	21	20	25	20	25	.....	20	20
16.8	1.30	Evaporated Peaches, lb.....	20	18	30	16½	16	15	15	.....	19	22	20	15
13.8	6.57	Canned Peaches, No. 2½, Std., 29 oz.....	25	26	40	30	25	25	28	30	22	25	25	20
15.4	2.20	Canned Pineapples, No. 2½, Std., 30 oz.....	35	27½	40	30	35	28	32	35	28	35	30	25
15.0	.96	Raisins, seeded, pkg. 15 oz.....	15	13¼	15	15	15	14	16	15	14	15	15	15
15.6	1.34	Prunes, medium size, lb.....	18	15	18	16½	18	16	17	20	12½	18	15	15
VEGETABLES														
3.8	1.27	White Potatoes, lb.....	2½	5⅓	3	5	5	5	4½	8	4	5	4½	3½
11.0	2.44	Sweet Potatoes, lb.....	.....	.....	.....	10	.....	.....	.....	15	.....	.....	.....	.....
5.0	2.50	Onions, lb.	7	7	8	7	6	5	6	5	3½	5	5	5
16.6	1.06	Navy Beans, dry, lb.....	20	17	18	18	18	18	18	18	16	20	16	16
14.3	15.88	String Beans, canned, No. 2, Std., 19 oz.....	20	16½	20	18	20	13	20	22	16	18	15	18
13.4	3.05	Corn, canned, No. 2, Std., 20 oz.....	13	18½	25	22	16	18	16	20	17	20	15	15
13.5	5.40	Peas, canned, No. 2, Std., 20 oz.....	18	18½	20	18	15	15	16	22	15	22	18	15
15.3	.95	Split Peas, lb.	15	15	15	15	18	13	22	20	7	15	17	15
23.8	1.21	Peanuts, unshelled, lb.....	25	20	10	20	25	16½	.....	.....	21	15	.....	25
9.7	9.70	Tomatoes, canned, No. 3, Std., 33 oz.....	20	21	25	25	17	20	23	25	20	22	22	20
5.7	4.75	Cabbage, lb.	7	10	7	6	6	5	4	8	7	7	5	3
5.7	3.35	Beets, lb.	5	3	10	5	.....	10	6	15	7	10	.....	.....
4.8	2.67	Turnips, lb.	5	3	10	4	6	4	4	8	7	8	.....	.....
MEATS AND FISH														
38.1	5.86	Beef, Round Steak, lb.....	40	55	55	55	34	45	50	55	40	45	40	30
40.1	8.00	Veal Cutlets, lb.	45	55	50	50	34	50	55	50	40	50	45	40
36.4	4.18	Leg of Mutton, lb.....	35	.....	45	.....	28	35	.....	40	45	40	40	25
41.2	4.90	Leg of Lamb, lb.....	45	41	45	44	36	45	45	45	45	45	40	35
37.9	3.08	Pork Chops, lb.	40	39	40	45	38	50	40	38	40	50	40	35
50.2	2.64	Ham, sliced, medium fat, lb.....	50	46½	50	55	50	75	55	55	50	50	45	50
53.0	18.23	Chickens, broilers, lb.....	50	.....	45	60	65	45	.....	55	60	60	45	60
26.0	7.22	Salt Cod, lb.	25	13	30	30	32	27½	22	28	24	.....	25	20
24.7	2.47	Salt Mackerel, lb.	25	16	20	.....	30	27½	28	25	27½	30	20	25
30.2	6.71	Halibut, lb.	35	30	35	50	32	35	45	35	25	.....	30	30
29.4	4.59	Salmon, lb.	35	35	40	50	32	35	45	50	40	30	30	25
29.6	4.48	Salmon, canned, No. 1, tall, 1 lb.....	30	30	30	40	30	25	28	50	25	30	28	25
33.0	8.09	Trout, lb.	38	75	26	85	30	25	20	25
26.2	8.19	Whitefish, lb.	25	30	26	30	25	27½	25

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Lexington, Ky.	Nashville, Tenn.	Little Rock, Ark.	Chicago, Ill.	Madison, Wis.	Lincoln, Neb.	St. Paul, Minn.	Fargo, N. D.	Sioux Falls, S. D.	Rapid City, S. D.	Topeka, Kans.	Denver, Colo.	Phoenix, Ariz.	Tucson, Ariz.	Salt Lake City, Utah	Reno, Nev.	Seattle, Wash.	Portland, Ore.	Los Angeles, Cal.	Berkeley, Cal.	San Fran- cisco, Cal.
300	330	330	310	300	306	280	290	310	285	275	270	308	330	280	330	285	270	306	350	305
70	160	175	160	196	200	140	200	180	170	205	165	204	200	140	225	190	175	160	192	250
75	74	100	70	80	62	75	65	75	70	75	60	70	70	60	70	65	68	60	75	70
15	7½	11	11	11	12	10	13	10	15	10	11¾	12½	12	12	15	10	10	11	12½	12½
35	34	35	40	43	40	35	35	35	40	32	35	45	40	.....	45	45	40	34	45	40
6	5	7	6½	7½	6½	8	7	6½	7	5¼	6	6¾	7	7½	10	7	8	7	8⅓	8
10	8	8	7	8	6½	8	7	7	8	6¾	8	10	8	9	11	9	8	7	8	8
13	7½	10	10	8	11	10	13	7½	8½	9	9	10	.....	9	12½	10	8	10	10	10
13	7	10	8	8	.....	8	13	7½	8½	8	9	10	9½	8	10	9	8	10	10	8
13	7	12	13	14	12½	12½	12½	13	14	12	12½	14	14	15	12½	12	12½	13	12½	10
13	12½	15	10	9	.....	.....	10	.....	10	10	12½	13½	20	10	12½	12	11	.....	12½	10
12	7	8⅓	7	15	10	10	10	10	17½	7	.....	7½	7½	.....	7½	12½	10	8	10	10
13	10	12	12	14	.....	12	13	15	.....	12	15	15	15½	14	15	15	15	13	15	15
12	11	12	13	14	12½	15	17½	12½	15	13	12½	13	13½	12½	12½	13	12½	15	12½	15
18	12	20	12	15	.....	10	15	10	20	10	12½	15	15	15	14	12	12½	12	15	15
10	10	10	9	10	9	8	10	10	10	10	.....	10	10	10	10	11	11	7½	10	10
35	15	25	22	20	18	22	25	22	25	20	25	20	20	25	16	25	20	19	25	25
35	15	25	22	20	18	22	25	22	25	20	25	20	20	25	16	25	23	19	25	25
15	10	10	15	15	11	15	16	17	20	15	.....	12½	15	15	14	10	10	12½	12½	12½
9	9	9	8¾	9	9½	10	9½	9½	12½	9	10	9½	9¼	9½	10	9	9	9	10	10
80	65	70	75	85	87	85	90	80	110	80	85	100	100	90	90	100	100	82	100	95
30	32	25	30	25	40	30	30	.....	25	23	.....	30	.....	20	15	28	30	25	35	25
45	30	35	25	30	22	25	50	50	40	25½	.....	45	40	.....	50	25	25	25	25	40
40	38	35	45	38	33	38	35	30	35	35	45	40	52½	40	56	53	45	47	48	48
15	12	16	12	10	11	9	12	11	10	10	12½	15	15	12	10	12	13¼	12	12	12
40	28	34	35	35	30	30	35	30	35	35	35	35	37	30	35	30	27	28	35	35
55	47½	48	50	55	48	50	55	45	50	55	57½	65	47½	60	60	60	60	63	65	60
55	48	48	50	49	48	48	45	46	45	48	48	55	55	50	61	53	52	53	55	55
35	32	34	33	35	32	30	32	30	35	33	33	35	33	30	40	26	28	32	35	30
35	30	31	35	34	31	30	32	35	35	35	30½	35	36	40	40	38	35	35	35	35
35	34	35	33	34	32	28	32	35	40	35	32	37	.....	35	45	38	35	35	40	40
290	180	200	150	200	213	150	150	200	85	125	225	125	200	.....	195	180	.....	190	195	190
85	75	50	70	100	30	40	75	75	50	80	85	80	90	.....	57	65	95	60	60	50
75	65	75	70	70	64	40	65	75	40	75	75	75	85	75	79	65	75	64	72	75
.....	.....	.....	75	90	.....	.....	.....	.....	.....	.....	.....	75	.....	.....	.....	.....	.....	.....	75	75
30	25	25	25	30	22	25	30	28	40	25	27½	30	20	35	30	25	23	30	32	30
15	15	15	25	.....	25	22	18	.....	17½	.....	20	17½	17½	12	15	18	17½	22	22	20
13	12½	15	18	15	16	18	18	15	17½	15	20	17½	17½	14	15	15	17½	16	13	12½
30	25	22	30	25	25	25	25	25	27½	22	25	25	25	20	30	25	20	21	22	25
35	25	25	25	35	28	25	25	28	30	27½	30	25	25	30	22	30	25	22½	25	25
15	12	10	15	14	15	15	15	15	15	15	15	15	15	12½	15	13	12½	12	11	15
15	15	14	16	15	15	15	18	15	17½	12½	15	16	17½	12½	12½	15	12	19	15	15
3½	3	3	4	5	3	4	5	5	1½	4	4	2½	3½	1½	3	2¼	1½	2	4	3½
4	4	5	5	5	5½	5	10	8	8	3⅓	5	3	5	3	2½	3	2	3	3¼	3
16	12½	17	18	15	17	16	17	17	15	15	15	17½	15	16	17	17	12½	17	17½	15
20	10	18	18	18	16	15	16½	18	15	20	15	20	15	14	20	15	15	15	15	15
15	15	15	17	20	12	15	16½	15	17½	13¾	12½	15	15	15	20	15	15	13	17½	15
20	15	15	19	18	15	15	16½	15	17½	16½	15	17½	17½	20	17	15	15	14	15	15
.....	15	13	15	15	18	12½	13	.....	20	.....	15	20	12½	12½	15	12	12½	13	15	15
.....	25	20	25	30	23	25	30	20	25	25	25	30	22	30	40	25	24	25	25	20
20	14	18	23	27	19	18	25	20	20	20	15	22½	17½	15	20	14	20	17	15	15
4	5	6	4	8	6¼	5	8	7	8	5	5	6	6½	7	4	3	5	.....	1½	1
4	5	5	3	3	5	5	10	.....	5	5	.....	4	5	1½	5	5	6	.....	2	2
.....	5	5	4	3	5	5	8	.....	5	3	.....	4	5	1½	3	5	5	.....	2	2
40	40	40	28	35	38	40	30	27	35	41½	45	30	35	25	32	30	35	30	32	30
50	30	40	35	32	40	35	35	27	40	45	52½	40	37½	30	35	32	25	35	35	32½
45	40	50	28	40	25	35	35	30	40	40	.....	40	40	25	32	38	25	.....	.....	.....
50	35	55	40	45	35	37	40	35	45	45	40	45	.....	35	40	38	30	33	35	32
35	40	35	38	38	32	33	35	33	40	35	37½	40	45	35	37	38	35	33	37½	30
45	50	50	45	45	45	50	45	40	50	60	60	50	47½	45	50	50	50	45	60	55
70	75	50	53	.....	54	50	45	40	55	50	60	35	50	45	55	45	45	45	65	60
20	.....	30	30	27	16	30	20	29	35	30	25	35	40	20	28	17½	20	24	27	25
20	20	30	25	25	20	30	30	20	15	27½	25	.....	20	35	15	25	20	30	35	25
35	.....	40	30	28	30	30	30	32	25	29	35	25	25	27	28	20	23	17	25	20
27	20	40	30	30	30	30	35	32	35	25	35	30	30	25	25	20	24	25	22½	22½
30	24	20	30	27	28	30	35	35	30	28	30	30	27½	25	30	30	25	26	30	30
25	25	35	25	23½	25	20	25	.....	40	27½	35	.....	.....	60	25	25	.....	.....	.....	.....
30	27½	35	28	25	12	25	25	.....	25	27½	35	20	.....	35	.....	.....	.....	.....	.....	10

Modern Methods of Crystallizing Margarine Emulsion

By ALAN PORTER LEE,
Consulting Chemical Engineer.

MARGARINE, whether compounded of animal or vegetable fats, is intended to be a homogeneous, intimate mixture of whole or skimmed milk, with an oil, or more generally, a mixture of several oils of varying melting points.

Selection of Oils.

The first criterion in the selection of the oils is neutrality of flavor, that is, absence of any characteristic flavor, which would mask or injure the butter-like flavor which is imparted to the finished margarine by the cultured milk. The next consideration in the selection of suitable oils is, of course, that they shall have such melting points and consistencies that the finished product will be marketable and *usable* under varying conditions of temperature and climate.

Prerequisites of a practicable fat product for spreading on bread as a relish are that it may be cut or formed readily into individual portions on removal from the refrigerator, that it may be spread on bread easily at ordinary room temperatures without crumbling or soaking and that it does not become too soft and mushy under the influence of summer's heat. These requirements are based, of course, on the demands of popular taste in temperate climes, for the inhabitants of southern Europe are well pleased with bread moistened with olive oil, which answers none of the above requirements save the one of freedom from crumbling.

Margarine Manufacture a Problem in Sciences.

The above mentioned conditions, together with that of suitable flavor, have made the manufacture of margarine a problem in three sciences, viz., chemistry, bacteriology and physics (or more exactly, physical chemistry). Chemistry is employed in preparing the various oils and fats so that they will be of neutral flavor and of proper consistency for use in margarine, bacteriology in developing the desired flavor in the milk to be compounded with the oils, and physical chemistry in making the compound and in so handling it through the various stages of manufacture that the finished product will be smooth, homogeneous and uniform throughout.

We will not discuss here the chemical methods of preparing the various oils and fats for use in margarine, nor will we consider in detail the bacteriological methods of producing the desired flavor in the milk, except to note that the production of this flavor must be carefully controlled by chemical as well as biological checks, not only to keep the flavor uniform but for reasons connected with the consistency and texture of the product, as will be explained below.

Let us assume, then, that we have two or three neutral oils or fats of different melting points and consistencies, which we wish to combine with cultured milk to make a margarine. The first step is to combine the oils in the desired proportions, and as all fatty oils are miscible, or soluble in each other, in all proportions, this step is easily accomplished.

When, however, we desire to add a certain amount of milk to the mixture, we discover that milk, which

consists of a small amount of solid matter, dissolved and suspended in a large amount of water, is not at all soluble in, or in the ordinary sense, miscible with fatty oils. The most perfect union of these dissimilar substances obtainable is an *emulsion*, which is formed by agitating the milk and oils together so vigorously that each of the two masses is broken up into innumerable tiny particles or droplets, and these two kinds of droplets are so thoroughly intermingled that they cannot be distinguished, except under a powerful microscope.

The resultant *emulsion* has all the characteristics (to the eye) of a solution, but if allowed to stand a short while, it will separate into two layers, one of oil, one of milk, showing that it is not a true solution but only an exceptionally complete mechanical mixture.

Making the Emulsion.

The making of the emulsion must be very carefully controlled as it is a delicate operation and regulation of time and speed of mixing and accurate control of the various temperatures of the process are essential to a uniformly successful product. Here we observe the relation of the bacterial culture of the milk to the texture of the finished margarine. While this culture must be carried to a certain point to obtain a desirable flavor, if not checked in time the acid products of the bacterial action will coagulate some of the albumens of the milk and thus prevent a perfect emulsion, as the coagulated albumen will not be broken up and will appear as small grainy or powdery lumps in the finished margarine.

The mechanical means employed for making the emulsion are various, the object being thorough mixing at a fairly high speed. A popular mixer, with many, is known as the *Holland type* butterine churn, which makes a very good emulsion, but requires a relatively large amount of power. Others use an ordinary revolving butter churn.

The makers of a new emulsifying machine of American design claim that it makes a perfect emulsion with a minimum consumption of power. There have been many experiments in Europe and America in the production of margarine emulsions by means of homogenizers and centrifugal emulsors, but the writer does not know of any commercial adaptation of these machines to this purpose in this country. As the emulsion is formed at temperatures above the melting point of the mixture of oils, in order to prevent separation into its components and to retain it as margarine it must be cooled quickly and thus solidified.

Crystallization of the Emulsion.

This, the crystallization of the emulsion, is the most important step in the manufacture of margarine. The texture, flavor and keeping qualities of the finished margarine all are dependent, to a large degree, upon proper crystallization.

The original method employed for crystallization consisted in letting the emulsion flow as quickly as possible into a tub or vat containing ice water, which was cooled either by cakes of ice or by mechanical

refrigeration. This method has numerous disadvantages, chief of which is that the emulsion will not be cooled evenly in this way and so forms lumps and balls in the water. The outside of the lumps will be solidified quickly and the inside, remaining liquid, will start to separate before solidification. Also the temperature of the water is difficult to regulate and is generally higher at the end of a run than at the beginning. This results in separation of the emulsion and consequent irregularity in the product.

A further disadvantage is the tendency of the water to dissolve and wash away a portion of the milk solids which are valuable in the product for their flavor and their food value and also in the promotion of keeping qualities. After the emulsion is crystallized the solid material is allowed to stand in trucks for some time at a uniform, carefully regulated temperature. During this period the development of the desired flavor progresses further and the crystals reach a uniform temperature which facilitates the next process—that of kneading and salting.

Experience has shown that the best results are obtained in tempering and working when the solidified emulsion is in the form of fine light flakes, free from large lumps. This condition cannot be met with the simple chilling in a vat of water. To arrive at the desired results, many modifications of the system of dropping the emulsion into a tank of water have been devised. Among these modifications may be mentioned several mechanical means of distributing the emulsion evenly through the water, such as discharging the emulsion through a spray nozzle, or agitating the emulsion with the water by means of mechanical agitators of various types or by means of an air jet.

Objections to Water-Crystallization.

All of these methods are subject to several objections. None of them insures crystallization of the emulsion in flakes as small as desired, and they all tend to break up the emulsion, causing separation of the milk and oil and resultant irregularity of the product. Then, as the temperature of the water is raised by the emulsion, the latter fails to crystallize at all and clogs the various mixing machines as a semi-liquid sticky mass, thus rendering the mixing ineffectual.

Most of those margarine manufacturers who still use the water-tank system of crystallizing the emulsion have adopted the method of spraying the emulsion, just before it falls into the tank, with a heavy spray of ice water. This causes the product to crystallize in the desired small flakes, but this method is still subject to the objection that the force of the water washes part of the milk solids out of the emulsion. Indeed, chemical analysis of the water flowing away from the crystallizing tank shows that not only part of the milk, but a portion of the oils as well, is washed away.

Another important drawback to the water-tank system of crystallization is the extreme difficulty of maintaining sanitary conditions in the plant when this system is used. The tank itself quickly becomes sour and the floors of the crystallizing room are always running with greasy water. The perforated paddles with which the crystals are dipped from the tank generally spill some of the margarine on the floor and so things are greasy and messy generally, requiring constant labor to maintain the cleanliness and sanitation, which is imperative in a food factory.

The last but not the least objection to the water-tank system of margarine crystallization is the matter of

cost. This may be divided into three classes, viz., labor, power and water costs. The constant labor of from two to four men is required to dip the crystals from each crystallizing tank and at least one man's labor to keep the floors clean about each tank.

In the sanitary margarine factory the cooling water is used only once and as this water has to be artificially refrigerated, a large part of the power used in the refrigeration is lost when the water flows away. In fact, the manufacturer who uses this system is actually *throwing coal down the sewer*. This should cause reflection particularly in these times of coal shortage. The cost of the large amount of water used, whether it be city water or water pumped by the manufacturer from his own well, is another item, i. e., *more coal*. The water must be exceptionally pure and free from bacteria and some manufacturers have had to install expensive filters or purification plants to obtain suitable water.

The Dry-Crystallizing System.

Some few years ago an improved process of crystallizing margarine without the use of water was developed and patented by an American inventor. It was claimed by this inventor that his crystallizing process is open to none of the objections to the water-crystallizing method, and the adoption of the new method by several of the largest and most progressive margarine manufacturers in the United States and Europe, seems to substantiate his claims.

The method, referred to herein as the dry-crystallizing process, consists in applying the emulsion in a thin film to the surfaces of hollow revolving cylinders, which are chilled by the circulation of cold brine through them. By the proper application of scraping knives to the surfaces of the cylinders, the solidified emulsion is scraped off directly into the tempering trucks, without any manual labor whatever. The product as it comes from the scraping knives is in the form of the fine light flakes desired, containing *all* the oil, milk and milk solids of the original mixture but free from any adherent water such as that which would be picked up in a water crystallizing tank. Uniform size and thinness of the flakes are guaranteed by automatic mechanical means.

Separation of the emulsion is prevented by keeping the temperature of the cylinder surfaces always uniform. This is accomplished by circulating the brine from the rolls through a brine tank in which ammoniac expansion coils are immersed, as in any ordinary brine refrigeration system. Thus, if the system is properly insulated, the losses of refrigeration (and consequently of *coal*) are so slight as to be negligible.

Manufacturers who use this crystallizing system find that the uniformity of the product as it goes to the tempering room greatly facilitates the operations of tempering and working and that a uniform product of perfect texture and the finest flavor results therefrom. The improved sanitary conditions due to the absence of water and of handling of the product are marked.

Advantages of Dry Crystallization.

Summarizing, we may conclude that the advantages of the dry-crystallizing of margarine emulsion over the water system are that the dry method produces a uniform product of superior texture and flavor, without loss or separation in crystallization, that it improves the sanitary condition of the plant, that it simplifies the tempering and working processes, that it saves the labor of from three to five men for each

operating unit of the crystallizing room, and that it reduces the *coal* bill and *eliminates* the water bill. As licenses under the dry-crystallization patent have recently become more available than formerly, it is probable that this system will be adopted by the majority of margarine manufacturers, following the lead of the largest, who already employ the dry-crystallization method.

Bottlers' Formulas for Sugar Saving Syrups.

The quantity of sweetening ingredient to be used in bottled soft drinks depends upon the personal preference of the consumer which is influenced by the acidity of the beverage. The acid beverages, such as ginger ale, cherry, raspberry, pineapple, strawberry, lemon, orangeade, grape and other sodas, require more sweetening than do the non-acid beverages, such as root beer, sarsaparilla, birch beer, cream, chocolate, etc. Some consumers, especially children, prefer a sweeter product than do others. Consequently, from the standpoint of sweetness, soft drinks may be divided into "sweet" products and "dry" products, and since a "sweet" acid drink requires more sweetening than does a "sweet" non-acid drink, soft drinks may be further subdivided as indicated in Table I, which shows the average quantity of sugar which has been used heretofore in beverages.

TABLE I.

Normal quantity of sugar in soft drinks, based on analyses made in the Bureau of Chemistry:

	Ounces per Half-Pint Bottle.
Non-acid group—Sarsaparilla, root beer, etc.:	
In "sweet" products	$\frac{3}{8}$
In "dry" products	$\frac{1}{2}$
Acid group—Lemon, grape, phosphates, etc.:	
In "sweet" products	1 to $1\frac{1}{2}$
In "dry" products	$\frac{3}{4}$

The principal sweetening ingredients proposed for replacing a part of the sugar in bottled soft drinks are corn syrup (ordinary glucose), corn sugar, maltose syrup, honey and high grade refiner's syrup. The Water Laboratory after testing most of these products in various combinations with many different flavors has found: *First*, that none of these products, except possibly high-grade refiner's syrup which has not been thoroughly tested yet, can be used to replace all of the sugar; *second*, that each of these proposed sweetening ingredients possesses a characteristic flavor which may affect the palatability of the beverage unless it is used judiciously in the proper combination with ordinary sugar; *third*, the keeping quality of these products when made up into syrups is not so high as that of ordinary sugar syrup, but if the new syrups are filtered, boiled and used immediately, the keeping quality of the finished beverage is satisfactory, as observed over a period of six weeks; *fourth*, the relative sweetness of the products mentioned above (excepting refiner's syrup) is as follows: Ordinary sugar 100; honey (44° B.) 75; corn sugar 45; maltose syrup (42° B.) 30, corn syrup (45° B.) 20; *fifth*, that these products can be used to replace one-fourth to one-half the amount of sugar ordinarily used, thereby effecting a saving of approximately 50,000 tons of sugar a year.

As a result of the experimental work, the combinations for sugar and corn syrup given in Table II are suggested for the different groups.

TABLE II.

Quantities of sugar and corn syrup suggested for use in soft drinks. Quantities given to be added to each half-pint bottle.

	Sugar. 45° Baume.	Corn Syrup
Non-acid group—Sarsaparilla, root beer, etc.		
In "sweet" products, see Formula 1.....	$\frac{3}{8}$	$\frac{3}{4}$
In "dry" products, see Formula 2.....	$\frac{1}{4}$	$\frac{1}{2}$
Acid group—Lemon, orangeade and imitation flavors, strawberry, etc.:		
In "sweet" products, see Formula 3.....	$\frac{1}{2}$	$\frac{3}{4}$
In "dry" products, see Formula 1.....	$\frac{3}{8}$	$\frac{3}{4}$

Practical bottlers' formulas for the combinations given above:

Formula 1.—Each $1\frac{1}{2}$ fl. ounces syrup to contain $\frac{3}{8}$ ounce sugar and $\frac{3}{4}$ ounce corn syrup (45° B.)

Dissolve 100 pounds of granulated sugar and 200 pounds of corn syrup (45° B.) in 27 gallons of pure water. The solution obtained will measure about 50 gallons. Filter, boil and use immediately. Add $1\frac{1}{2}$ fl. ounces syrup to each $\frac{1}{2}$ pint bottle.

Formula 2.—Each fl. ounce syrup to contain $\frac{1}{4}$ ounce sugar and $\frac{1}{2}$ ounce corn syrup (45° B.).

Same formula as No. 1. Add 1 fl. ounce syrup to each half pint bottle.

Formula 3.—Each $1\frac{3}{4}$ fl. ounces syrup to contain $\frac{1}{2}$ ounce sugar and $\frac{3}{4}$ ounce corn syrup (45° B.).

Dissolve 114 $\frac{2}{7}$ pounds of granulated sugar and 171 $\frac{3}{7}$ pounds of corn syrup in 28.6 gallons of pure water. The solution obtained will measure about 50 gallons. Filter, boil and use immediately. Add $1\frac{3}{4}$ fl. ounces syrup to each half-pint bottle.

If it is desired to use a less concentrated syrup than the one given and to increase the quantity per half-pint bottle, the following formula may be employed:

Each 2 fl. ounces syrup to contain $\frac{1}{2}$ ounce sugar and $\frac{3}{4}$ ounce corn syrup (45° B.).

Dissolve 100 pounds of granulated sugar and 150 pounds of corn syrup (45° B.) in 31.3 gallons of pure water. The solution obtained will measure about 50 gallons. Filter, boil and use immediately. Add 2 fl. ounces of this syrup to each half-pint bottle.

A cream soda made with $\frac{3}{8}$ ounce sugar and $\frac{3}{4}$ ounce corn syrup is less sweet than the other beverages of the same group, and a chocolate made with $\frac{1}{4}$ ounce sugar and $\frac{1}{2}$ ounce corn syrup is not quite sweet enough, even for a "dry" product. On the contrary, ginger ale made with $\frac{1}{2}$ ounce sugar and $\frac{3}{4}$ ounce corn syrup will be too sweet even for a "sweet" product, the combination $\frac{1}{2}$ ounce sugar and $\frac{1}{8}$ ounce or $\frac{1}{4}$ ounce corn syrup being preferable. For a "dry" ginger ale, $\frac{1}{4}$ ounce sugar and $\frac{1}{2}$ ounce corn syrup gave satisfactory results. One-half ounce sugar and $\frac{3}{4}$ ounce corn syrup will make a "dry" grape beverage, but more sugar will be required to make a "sweet" product.

Formula 3 can be used to make dry true fruit, blackberry, wild cherry, pineapple, strawberry, raspberry and grape beverages, but for sweet products of this nature, it will be necessary to increase the sweetening 30 per cent over that specified in Formula 3.

With the exceptions noted above, Table II can be used as a general guide for preparing beverages.

If desired, the same quantity of maltose syrup (42° B.) can be used in place of the corn syrup in Formulas 1, 2 and 3. In the case of maltose syrup, care should be taken to purchase only a high-grade product which is low in protein, otherwise the keeping quality of the finished beverage will not be satisfactory.

If it is desired to use corn sugar or honey in place of corn syrup, it will be necessary to use only about

one-half as much, since these products generally are sweeter than corn syrup. The corn sugar used in these experiments was slightly off flavor. It is suggested that corn sugar be used only in beverages with heavy flavors, such as sarsaparilla, root beer, etc., in which the slight, not altogether unpleasant bitterness is masked. It is suggested also that when corn syrup, corn sugar, etc., are used, the normal quantity of acid be reduced to two-thirds of the usual amount, and that the normal quantity of flavor be increased by one-half.

Experiments on refiner's syrup have not been completed, but sufficient work has been done to show that the lower grades of these syrups are not suitable for the manufacture of soft drinks because of their highly disagreeable saline taste. If only the highest grade is used, however, the finished goods should be satisfactory, at least the heavy flavored products, root beer, sarsaparilla, etc. Additional data on this subject will be made public in the near future. Tests on the cola group of beverages are in progress also.

Bottlers are urged, in the interests of sugar conservation, to limit the production of beverages such as grape, phosphates and other acid drinks requiring a large amount of sweetening to render them palatable. By curtailing the output of this type of beverage and by making use of the formulas here given, it is believed that the normal production of bottled soft drinks need not be greatly reduced and yet the supply of sugar will be conserved.

Saccharin which some bottlers have proposed to use during the period of the war has no food value and is considered to be deleterious to health. Its use is prohibited by the laws or regulations of 14 states and is believed by the Department of Agriculture to be within the inhibition of the Federal Food and Drugs Act (Food Inspection Decisions 135, 142), consequently, it is not to be classed with such products as corn syrup, maltose syrup, etc., mentioned above.

The Federal Food and Drugs Act places no restriction on the use in soft drinks of corn syrup, maltose syrup, honey, corn sugar and refiner's syrup. Their presence should be declared, however, on the label.

The Bureau will appreciate it if bottlers using these formulas will report the results obtained, especially any difficulties experienced in their application.

Millers' Profits to Be Regulated.

The Food Administration made public on July 1, 1918, the measures that were taken earlier in the season to prevent profiteering in the flour milling industry. The millers, under the original regulations, were allowed a maximum gross profit of 25 cents a barrel, based on their annual business.

"The business is a seasonal one and cannot be determined upon a few months' operations," it was stated.

"The milling year ends on July 1, and as some differences of opinion had arisen between the millers and the Food Administration as to the basis upon which profits were to be calculated, the question was referred to a committee comprising the chairman of the United States Tariff Commission, a member of the Federal Trade Commission, a member of the Agricultural Advisory Board, with Charles Espenschied, a retired miller, and a representative of the Food Administration.

"The chief differences with respect to the conduct of the millers under the regulations to date revolve upon

whether they should include excess profits taxes as a part of their expenses. Based on the decision which was sent out to the millers on June 17, neither excess profits tax nor income taxes should be recognized as items of expense for the purposes of the mills' accounting.

"With regard to millers finding themselves at the end of the fiscal year with an amount in excess of 25 cents a barrel profit, it was suggested that they could release themselves from the difficulty by selling a sufficient amount of flour at a nominal price to the Food Administration or the Army or Navy to liquidate any such surplus profit. The accounts of millers will be, and are, audited by the representatives of the enforcement division of the Food Administration.

Oregon Regulates the Manufacture and Handling of Dairy Products.

Under authority of Section 13, Chapter 343, General Laws of 1917, which states that "it shall be the duty of the Dairy and Food Commissioner to make uniform rules and regulations for the carrying out and enforcement of the provisions of this Act," there were recently adopted by the Dairy and Food Commissioner of Oregon, Hon. J. D. Mickle, the following:

RULES AND REGULATIONS GOVERNING THE LICENSING OF CREAMERIES, CHEESE FACTORIES AND CONDENSERIES.

1. The creamery or factory building shall be well lighted and ventilated.

2. All floors, walls, ceilings and tables, benches, shelves and other fixtures shall be maintained in such condition that they may readily be made clean and sanitary. If not in such condition, they shall be promptly repaired, or replaced by suitable equipment. Floors shall be water-tight. Ceilings shall be dust-proof.

3. All walls and parts of walls and all ceilings not finished with tile or glazed material shall be kept well painted or shall be whitewashed at least once each year, and oftener if necessary.

4. All parts of walls, ceilings or other overhead coverings, doors, windows, window ledges, etc., shall be cleansed whenever they become soiled, dirty or sooty.

5. All creamery or factory floors, fixtures, utensils and other apparatus (except brine tanks, cheese shelves and churns) shall be cleaned at the close of each operation and shall be clean at the beginning of each operation.

6. Cheese shelves shall be cleaned soon after the cheese has been removed therefrom, or oftener if necessary.

7. Churns shall be cleaned at the close of each day's operation, and shall be clean at the beginning of each day's operation.

8. There shall be no condition in, underneath or connected with the factory building or premises which may render it difficult or impossible to have the factory rooms clean and sanitary, and free from offensive odors.

9. No cesspool, blind well, or nuisance of any kind shall be in or underneath the creamery or factory building.

10. All creamery or factory utensils and apparatus used in handling, storing, preparing or manufacturing dairy products shall be of such construction and in such condition that they may readily be made clean and sanitary and so arranged that they are accessible

for thorough cleaning. Common iron piping or rubber hose shall not be used for milk or cream conveyers.

11. All surfaces of creamery or factory utensils and apparatus with which dairy products come in contact shall be without open joints or open seams and shall be smooth and free from rust or paint.

12. All creamery or factory rooms, fixtures, utensils and apparatus used in handling, storing, preparing or manufacturing dairy products shall be protected from flies, rodents and vermin.

13. There shall be in every creamery and factory an efficient system in use for disposing of liquid waste, sewage and other refuse in such manner that no liquid waste, sewage or other refuse shall be deposited underneath the creamery or factory building, or pollute, befoul or cause offensive odors in the creamery or factory building, or on the creamery or factory grounds, or pollute or contaminate the water supply of such creamery or factory.

14. All floor drains shall be trapped except such drains as are open from the starting point to a point outside the building.

15. Vats, tanks and other containers used in handling or storing factory by-products not intended as food for man shall be so kept that they will not become filthy, foul or offensive.

16. Pipes and other apparatus used for conducting such by-products shall be so arranged and kept that they will not cause or discharge foul or offensive odors in the creamery or factory building.

17. When vats, tanks, containers, pipes, conductors or other apparatus used in handling or storing factory by-products not intended as food for man are stationed in creamery or factory rooms where dairy products intended as food for man are handled, stored, prepared or manufactured, they shall be cleaned at least once for each day that butter or cheese is manufactured.

18. No unclean milk or unclean cream shall be used in the manufacture of any dairy product intended as food for man.

19. No dairy product shall be prepared or manufactured as food for man unless it shall be securely protected from filth, flies, dust and other contaminating, unclean, unhealthful or insanitary conditions.

RULES AND REGULATIONS GOVERNING THE LICENSING OF BUTTER AND CHEESE MAKERS.

1. (a) A buttermaker shall have had experience equivalent to at least 18 months in a creamery, covering the receiving, sampling and testing of milk and cream, and the complete process of butter making. If he satisfactorily completes the Buttermaker's Short Course at an Agricultural College, having previously had six months' experience in a creamery as defined above, the experience requirement may be reduced six months.

(b) A cheesemaker shall have had experience equivalent to at least 18 months in a cheese factory, covering the receiving and testing of milk and the complete process of cheese making. If he satisfactorily completes the Cheesemaker's Short Course at an Agricultural College, having previously had six months' experience in a cheese factory as defined above, the experience requirement may be reduced six months.

2. A maker shall have a creditable record in operating and keeping in a sanitary condition any creamery or cheese factory in which he may have been employed, and in any work which is considered an equivalent for the required experience or part thereof.

3. No dairy product shall be manufactured from

any unclean milk or unclean cream. Violation of this rule will subject the buttermaker or cheesemaker guilty of the violation to the revocation of his license.

4. No dairy product shall be handled, stored, prepared or manufactured as food for man, unless it is securely protected from flies, filth, dust or other contamination, unclean or insanitary conditions.

5. Plenty of water and soap, or other cleansing material and clean towels shall at all times be conveniently located for the use of the operators and employees.

6. All persons engaged in handling, preparing or manufacturing dairy products shall be required to be cleanly in their work and to wear clean clothing.

7. All persons shall be required to wash their hands in clean water before handling dairy products and after each time they have made use of a toilet, and when from any other cause their hands become soiled or unclean, before again touching or handling dairy products intended as food for man.

8. Spitting on the floor, wall or furnishings of the creamery or factory shall not be permitted or tolerated.

9. Smoking in the creamery or factory shall not be permitted or tolerated at such time or place as may tend to affect the flavor of the dairy product.

10. Failure to furnish information called for upon application blank or any false statement therein may be cause for denial or revocation of license.

11. Violation of any rule or regulation adopted by the Dairy and Food Commissioner, relating to the licensing of buttermakers or cheesemakers, or violation of any law of this State relating to creamery or factory premises, utensils, or equipment, or to the product or products there manufactured will render the licensee liable to prosecution and revocation of his license.

Published as Regulation No. 26.

J. D. MICKLE,
Dairy and Food Commissioner.

Portland, Ore., April 1, 1918.

RULES AND REGULATIONS GOVERNING THE LICENSING OF MILK DEPOTS, MILK OR CREAM SHIPPING STATIONS, AND RECEIVING STATIONS.

Every milk depot, milk or cream shipping station, receiving station, or place where dairy products are received or handled, shall be maintained in a clean, healthful and sanitary condition.

Rooms used for the receiving, storing or testing of milk or cream shall not be used for the storing of other articles or products which may in any way contaminate or injuriously affect the quality or flavor of milk or cream.

The presence of chickens or other fowls in any milk depot, milk or cream shipping station, or receiving station is especially prohibited. All milk or cream testing apparatus must be cleaned immediately after each time it is used and kept in a cleanly condition.

Any violation of these regulations or of the law governing the above mentioned places will be deemed sufficient cause for the revocation of the license of the milk and cream tester, or the license under which the milk depot, milk or cream shipping station, or receiving station may be operating.

Published as Regulation No. 27.

J. D. MICKLE,
Dairy and Food Commissioner.

On the 18th of June, 1918, the administration of the Kentucky Food and Drugs Act was taken over by the State Board of Health.

Implied Warranty of Wholesomeness of Food

The following decision, handed down by the Court of Appeals of New York, is of great importance to all food manufacturers and dealers. The case of *Race against Krum* has been in the courts for some years. After the lower court had decided in favor of the plaintiff, the Association of Ice Cream Manufacturers took up the case to determine certain points of law. The Court of Appeals, however, sustained the former judgment.—Editor's Note.

COURT OF APPEALS OF NEW YORK.

Decided February 5, 1918. C. Bertrand Race, respondent, v. Charles B. Krum, appellant.

When an affirmance by the Appellate Division is not unanimous, the question whether there is any evidence to support a finding of fact is one of law and reviewable by this court, but if that court has found there was such evidence, the question is no longer one of law and its decision upon the facts is final.

A druggist in selling ice cream prepared by himself, to be consumed in his store, impliedly warrants that it is wholesome and fit to eat, and for an injury to a customer caused by poisonous matter in the cream he is liable.

Appeal from a judgment of the Appellate Division, Third Department, two of the justices dissenting, affirming a judgment entered upon a verdict. The facts, so far as material, are stated in the opinion.

Joseph A. Lawson for appellant; Edgar T. Brackett for respondent; Walter B. Grant and Walter J. Carlin, amici curial.

McLaughlin, J.

This action was brought to recover damages for personal injuries alleged to have resulted from the consumption by plaintiff of unwholesome and poisonous ice cream sold to him by defendant. The complaint contains two causes of action. In the first a recovery is asked on the ground that defendant was negligent in selling the cream, and in the other that he warranted it to be fit for human consumption. A majority of the Court is of the opinion that the answer put in issue the material allegations of each. At the conclusion of the evidence, however, plaintiff elected to go to the jury only upon the second cause of action, and the case was submitted to it on that theory. Plaintiff had a verdict, and from the judgment entered thereon an appeal was taken to the Appellate Division, where the same was affirmed, two of the justices dissenting, and defendant appeals to this Court.

On the 22d day of June, 1911, defendant conducted a drug store in the City of Albany, and in connection with and as a part of such business sold ice cream to be consumed in the store. Some time during the evening of that day plaintiff, with two companions, entered the store and asked that each be served with ice cream, which was done, the two companions being served from one can and plaintiff from another. Plaintiff complained of the quality of the cream served him and ate only a part of it, stating it was "not good; there is something the matter with it." He then left the store, and as he did so the clerk who waited upon him examined the cream and he stated: "There is something wrong with that." Within a very short time thereafter plaintiff was taken violently ill and remained so for several days.

The appellant attacks the validity of the judgment on the ground (a) that there was *no* evidence to establish the cream sold to plaintiff was the cause of his illness, and (b) the trial court erred in instructing the jury that when defendant sold the cream to

plaintiff he impliedly warranted it was fit for human consumption.

As to the first contention, there certainly was some evidence tending to establish that plaintiff's illness was caused by the presence of a poison known as tyrotoxin in the ice cream; that such poison is a filthy product found only in milk and milk products, including ice cream. Having ascertained from the record that there is some evidence to support the finding of the jury that there was tyrotoxin in the cream, and that the same was the cause of plaintiff's illness, this Court is precluded from making a further examination on that subject. The question whether there is any evidence to support a finding of fact is one of law which, when the affirmance by the Appellate Division is not unanimous, is reviewable by this Court. When, however, it has found there is such evidence, the question is no longer one of law and the decision of the court below upon the facts is final (*Ostrom v. Greene*, 161 N. Y., 353; *Chainless Cycle Mfg. Co. v. Security Ins. Co.*, 169 N. Y., 304, 311; *Hawkins v. Mapes-Reeve Const. Co.*, 178 N. Y., 236, 238).

As to the second contention, I am of the opinion the trial court did not err in instructing the jury that when defendant sold the cream to plaintiff he impliedly warranted it was wholesome and fit to eat. In this connection, however, it must be borne in mind that we are not dealing with the liability of hotel proprietors, restaurant keepers, dining car managers or people engaged in business of that kind, but are considering solely the liability of a dealer who makes or prepares the articles that he is selling. As to such dealer we believe the instructions were proper. The general rule established by the weight of authority in the United States and England is that accompanying all sales by a retail dealer of articles of food for immediate use there is an implied warranty that the same is fit for human consumption (*Hoover v. Peters*, 18 Mich., 51; *Sinclair v. Hathaway*, 57 Mich., 60; *Winsor v. Lombard*, 18 Pick., 61; *Farrell v. Manhattan Market Co.*, 198 Mass., 271; *Askam v. Platt*, 85 Conn., 448; *Tomlinson v. Armour & Co.*, 75 N. J. L., 748; *Wiedeman v. Keller*, 171 Ill., 93; *Cantani v. Swift & Co.*, 251 Penn. st., 52; *Bark v. Dixon*, 115 Minn., 172; *Parks v. C. C. Yost Pie Co.*, 93 Kan., 334; *Doyle v. Fuerst & Kraemer, Lim.*, 129 La., 838; *Halley v. Swift & Co.*, 140 N. W. Rep., 292; *Nelson v. Armour*, 76 Ark., 352; *Bigge v. Parkinson*, 7 H. & N., 955; *Frost v. Aylesbury Dairy Co., Lim.*, 1905, 1 K. B., 608; see also vol. 35, Cyc. 407, and authorities cited; 40 L. R. A. N. S. 480, and note).

It is true as urged by the appellant that this Court, so far as I have been able to discover, has not heretofore expressed its view as to the soundness of the rule above referred to. There are, however, two cases in the Appellate Division of the Supreme Court, which, following the decision there made of the present case, have applied such rule—*Leahy v. Essex Co.*

(164 App. Div., 903) and *Rinaldi v. Mohican Co.* (171 App. Div., 814). And there are several authorities in this Court and in the Supreme Court where, in opinions delivered, the statement is made that such rule does exist. While it may be true, as contended, that such statements cannot be considered as settling the law on the subject, inasmuch as the same were not necessary to the decision (*Colonial City Traction Co. v. Kingston City R. R.*, 154 N. Y., 493, 495, and *Roberson v. Rochester Folding Box Co.*, 171 N. Y., 538, 551), they are, nevertheless, valuable as indicating the view of the writer of the opinion in each case as to what the law is or ought to be. One of the earliest cases of this character is *Van Bracklin v. Fonda* (12 Johns., 468), where the statement is made that "in the sale of provisions for domestic use, the vendor is bound to know that they are sound and wholesome, at his peril. This is a principle not only salutary, but necessary to the preservation of health and life." This statement was approved, or an equivalent one made, in *Moses v. Mead* (5 Denio, 617), *Divine v. McCormick* (50 Barb., 116), *Burch v. Spencer* (15 Hun, 504), *Money v. Fisher* (92 Hun, 347), *Miller v. Scherder* (2 N. Y., 262), *Fairbank Canning Co. v. Metzger* (118 N. Y. 260) and *Rothmiller v. Stein* (143 N. Y., 581, 592). In the authority last cited, Judge Peckham (subsequently Justice of the Supreme Court of the United States), who delivered the unanimous opinion of this Court, said: "So in regard to the sale of food for . . . human consumption, the law annexes an implied warranty that the food is not in an unwholesome condition and unfit to be eaten."

This rule is based upon the high regard which the law has for human life. The consequences to the

consumer resulting from consumption of articles of food sold for immediate use may be so disastrous that an obligation is placed upon the seller to see to it at his peril that the articles sold are fit for the purposes for which they are intended. The rule is an onerous one, but public policy as well as the public health demand such obligation should be imposed. The seller has an opportunity which the purchaser does not of determining whether the article is in the proper condition to be immediately consumed. If there be any poison in the article sold, or if its condition render it unfit for consumption, and the consumer be thereby made ill, some one must of necessity suffer, and it ought not to be the one who has had no opportunity of determining the condition of the article, but rather the one who has at his command the means of doing so.

The present case is a good illustration. Plaintiff was seriously ill for several days. Serious consequences followed the illness. He had no opportunity of determining, when the purchase was made, whether the cream were good or bad. Defendant did have such opportunity. He could have ascertained whether the ingredients which went into the cream contained the poison referred to, or after it was prepared he could have so cared for it that it would have been impossible for filth, which is conceded is the cause of the poison, to have gotten into it.

I am of the opinion, therefore, that the trial court did not err in the instructions given to the jury and that the judgment appealed from is right and should be affirmed, with costs.

Hiscock, Ch. J.; Chase, Collin, Cuddeback, Hogan and Crane, J. J., concur.

Judgment affirmed.

Home Canned Foods Safe When Properly Prepared.

The United States Department of Agriculture has issued the following statement prepared by the bacteriologists of its Bureau of Chemistry and the States Relations Service:

"There is no danger that the type of food poisoning known as 'botulism' will result from eating fruits or vegetables which have been canned by any of the methods recommended by the United States Departments of Agriculture, provided such directions have been followed carefully. It is possible that in a number of instances the directions were not strictly followed and that spoilage has occurred. Of course, extreme care should be taken to ascertain before eating canned goods of any kind whether they are in good condition, and if they have spoiled they should not be consumed.

"In case of any doubt as to whether the contents of a particular can have spoiled, the safest plan is to throw it away, although all danger of botulism may be avoided by boiling the contents of the can for a few minutes, since the *Bacillus botulinus* and the toxin or poison which it produces are killed by such treatment. No canned food of any kind which shows any signs of spoilage should ever be eaten. In the cold-pack method of canning given out by the Department of Agriculture, only fresh vegetables are recommended for canning, and sterilization is accomplished by the following processes: cleaning, blanching, cold dipping, packing in clean, hot jars, adding boiling water,

sealing immediately, and then sterilizing the sealed jars at a minimum temperature of 212° F. for one to four hours, according to the character of the material.

"Since the spores of *B. botulinus* are killed by heating for one hour at 175° F. (according to Jordan's *Bacteriology* and other recognized textbooks) there is no reason to believe that the *botulinus* organism will survive such treatment."

Decimal Flour Packages Proposed to Congress.

Millers should familiarize themselves with the decimal system for flour packages, which the Millers' National Federation has indorsed and which is embodied in a bill now before Congress, introduced at the request of the Bureau of Standards. This bill is an administration measure and will no doubt become a law.

If it passes Congress it will go into effect July 1, 1919. That is a long way in the future, but none too long for a measure which revolutionizes the practices of a century or more. It makes the standard package for flours, meals and commercial feedingstuffs, 100 pounds, or multiples thereof; and fractions of the package will be 1, 2, 4, 5, 10, 25 and 50 pounds. It is made unlawful to pack or ship flour, meal or feedingstuffs in receptacles of any other weight; but an export. Provision is also made for reasonable variations or tolerances in the weights of standard packages.

Sugar Grown Beneath Paper

IN HAWAII the climate is warm and the rainfall exceedingly heavy. Weeds spring up over night.

The young shoots of sugar cane are stiff and sharp. Indigenous weeds lack that quality. A certain Mr. C. F. Eckart, a man of scientific scholarship and a leading authority on sugar planting, concluded that if the cane had a good start, the shoots might be strong enough to pierce a covering while the noxious growths could not. After experimenting he found available yard wide strips of a particular kind of roofing paper. These are laid longitudinally over the rows and held in place by cane-field trash covered over the edges.

The paper must be strong enough to keep down the weeds but not strong enough to kill the young cane. Owing to irregularities in the ground some shoots strike the paper on a slant and buckle under, but even so, with their earlier start, the cane shoots outlast the weeds.

Five or six weeks after applying the paper the weed seeds that could germinate have done so and their sprouts are smothered. The cane shoots that have not come through show their presence by little tentlike elevations in the paper, which are easily recognized. At this point laborers pass between the rows and with long knives make longitudinal slits in the paper over the humps. This is rapidly and cheaply done and the cane heretofore covered emerges and grows. At first the shoots are blanched, but they rapidly turn green and lusty on reaching the sun. The growth of weeds between the rows beyond the edges of the paper is readily controlled by spraying.

So weeding is avoided, while many interesting things happen. Moisture enters the earth between the edges of the paper and seeps through; it is not dried out by the sun. The dark paper absorbs heat and imparts it to the soil underneath, raising the average temperature from 3° to 5° Fahrenheit. Fixation of nitrogen in the soil seems to proceed more rapidly than under usual conditions.

Asphalt building paper is not made for this purpose and it is, at best, a makeshift. So Mr. Eckart and his associates sought expert assistance.

Bagasse, a product derived from crushed sugar cane, is a fibrous substance which lends itself to making a paper pulp. Admirable papers of many sorts have been made from its fiber. These, however, tend to be hard and tinny whereas the problem was to produce a pulp from bagasse that

would make a sheet, which, under proper treatment is strong enough to withstand the Hawaiian rainfall and yet give way under constant, gentle pressure rather than by a punch. It must be dark in color and very, very cheap. The problem was solved and now plans are under way for a paper mill to take care of the great plantation under Mr. Eckart's management.



Photograph from *The Little Journal*.

Young Sugar Cane Peeping Through Its Paper Blanket.

The accompanying illustrations, which we are permitted to print through the courtesy of *The Little Journal*, show sugar cane four and one-half months after planting. The tall and lusty growth received



Photograph from *The Little Journal*.

Sugar Cane a lá Eckart.

Eckart treatment while the lower stand was cultivated and hoed in the usual manner. With paper spread as here indicated, the increase is ten tons of cane per acre or over twenty-eight per cent. That is, with less than one-half the labor, the product of the plantation is increased by over a ton of raw sugar per acre on land properly cultivated.

It seems fair to ask whether



Photograph from The Little Journal.

Sugar Cane Cultivated in the Usual Manner.

this invention will stop at sugar planting in Hawaii, with its abundant weed growth.

The principle is so new, however, that it would be dangerous to prophesy. If mulching felt or paper should prove to have a wider application in agronomy, it would involve other problems in research to develop it from corn stalks, cotton stalks, wild banana or other material.

Meat Packing in South America

ONE of the most serious questions confronting the countries of the world is that of the meat supply of the future. For nearly a decade the number of cattle has not been increasing in proportion to the demands of the growing populations. The decrease in the supply of meat has affected the United States as well as Europe. Russia, which before the war had some 50,000,000 head of cattle and two-thirds as many sheep as Australia, has ceased, temporarily at least, to be a factor in the European trade. The herds of western Europe, small before the war in comparison to the demands of the increasing population, are now greatly depleted and cannot be replaced for many years after the war. The situation in the United States is reaching an interesting stage. Within the last 10 years the population has increased about 18 per cent, while the herds have decreased 20 per cent. In 1893 the United States imported 3,293 head of cattle, and from its abundant supply exported over 287,000. In 1915, 23 years later, the import and export figures are practically reversed. In the latter year the United States exported only 5,484 head and imported 538,167 cattle.

Will South America, with its extensive areas suitable for cattle raising and its growing meat-packing plants, help relieve the situation? The outlook in that direction is, according to the Latin American Division of the U. S. Bureau of Foreign and Domestic Commerce, indeed, favorable. Already Argentina and Uruguay, and in a lesser degree Brazil, Colombia and some of the other countries, are figuring as meat-producing possibilities. In the development of this industry the general installation of refrigeration by steamship lines has been of great service.

In South America stock breeding is a resultant industry of meat freezing. Before the introduction of refrigeration, salted and dried meat, tough and unpalatable, was in general use locally and exported in limited quantities to Europe. This meat is known

variously as jerked beef, in Argentina as tassajo, as xarque in Brazil, in Peru as charque, and as biltong in Africa. It is still used in some parts of South America and in the Tropics, where it is almost impossible to keep fresh meat, but it has never been popular in Europe. As the saladeros (meat-drying establishments) could make use of almost any animal, and since the demand was quite limited, there were really no incentive to breed fine stock.

Stimulated by the increasing demand from Europe for imported fresh meat, attempts were made to export cattle on the hoof. These, however, proved unsuccessful. Then the meat-packing, and, indirectly, the stock-raising industries, were revolutionized by the introduction of refrigeration. This made possible the shipping of frozen and chilled meat. Chilled meat has a much more delicate flavor than the solidly frozen meat and normally brings $1\frac{1}{2}$ to $2\frac{1}{2}$ cents a pound more on the English market, but it must be used immediately after removing from cold storage. Chilled meat is kept in refrigerating chambers with a temperature not lower than 29° F. for a period of at least 48 hours and is never allowed to become exceedingly hard.

World's Output of Meat.

In 1916 the world's output of beef, mutton and lamb was as follows, in tons: Argentina, 436,405; New Zealand, 158,123; Australia, 104,053; United States, 80,522; Uruguay, 43,895; Brazil, 33,571; Canada, 21,723; Patagonia, 11,986; South Africa, 7,928; other countries, 17,441.

Argentina is today the most important meat-producing country in the world. Brazil is beginning to appreciate its potentialities as a meat producer and is likely to become a powerful rival in the near future. Uruguay has maintained its important position, while Paraguay, Colombia and Venezuela are among the countries that are receiving careful consideration from far-sighted American and English packers. Accord-

ing to latest reports there are at present more than sufficient refrigerating facilities to take care of the limited cargo space allotted, but it is the after-the-war situation that is being studied.

Argentina.

The meat-packing industry of Argentina has been spared the hardships incident to the experimental stages of a new undertaking. Its market was already created; finely bred cattle were available in Europe and the United States; it had but to model its packing house along well-established lines. It was not until 1901 when the exports from the United States began to decline materially, that exports of Argentina beef began to assume importance; but since that date the increase has been steady and rapid. Australia and New Zealand with a well-established trade in frozen mutton supplied the markets for this product. In the beginning Argentina paid but little attention to the raising of hogs, so that the exports of mutton and pork were of relatively little importance. During the period of 1908 to 1914 a decided change took place. The number of hogs in Argentina in 1914 represented an increase of 1,496,994 over the number in 1908, while cattle and sheep showed a corresponding decrease. This would seem to indicate that special attention is being paid to the pork-packing branch of this industry. Another indication of the future tendency is the fact that the Armour Co. has equipped its new plant with facilities for handling 1,000 hogs in addition to the 1,500 cattle and 2,500 sheep. The decrease in the number of cattle in the country indicates also that Argentina is now slaughtering up to the limit of its capacity and that exports are unlikely to increase within the next few years.

The number of cattle in Argentina in 1908 was 29,116,625, decreasing to 25,866,763 in 1914; the number of hogs increased from 1,403,591 in 1908 to 2,900,585 in 1914; and the number of sheep decreased from 67,211,754 in 1908 to 43,225,452 in 1914.

The following figures, quoted from a report of the Director General of National Statistics to the Minister of Finance of Argentina, give the quantity of meat exported during the years from 1910 to 1917, inclusive:

Meat.	1910. Tons.	1915. Tons.	1916. Tons.	1917. Tons.
Frozen beef	245,267	351,036	411,547	355,842
Chilled beef	8,441	11,703	16,153	38,995
Frozen mutton	75,102	35,035	51,317	39,820
Frozen pigs	1	887	1,345	764
Jerked meat	9,442	213	1,120	7,613
Canned meat	13,030	32,514	45,197	102,153
Frozen offal	11,102	11,158	18,069	14,029
Total	362,385	442,546	544,748	559,216

England has been the principal market for Argentine beef which it admitted free of duty while many of the other European countries imposed prohibitive import duties. This condition is changing due partly to the war demands; Italy and France are importing large quantities of frozen beef for their armies and the United States has opened its markets to foreign meat.

With one exception the large frigorificos are controlled by English or United States capital. The following are the more important ones:

The British & Argentine Meat Co. is an English firm owning the River Plate Fresh Meat Co. at Campana, the Las Palmas frigorifico founded by the Nelson Brothers, and a string of retail shops in England. This company has an authorized capital of £2,000,000.

An abstract of the company's report for 1917 is published in *The Statist*, for April 27, 1918. About 80 per cent of the meat imported by the company during 1916 and 1917 was taken by the English Government. During 1917 it exported 517,000 tons of frozen and chilled beef and mutton from the Plate and 20,000 tons from Brazil.

The Smithfield & Argentine Meat Co. is an English concern operating a frigorifico on the Parana River in the Province of Buenos Aires. At its annual meeting in 1916 it voted to increase its capital stock from £350,000 to £1,000,000. Eighty per cent of its output is contracted for by the English Government.

The Union Cold Storage Co. is also an English concern with a new frigorifico at Zarat in Argentina and holdings in Australia. The company is known in Argentina as the Anglo-South American Meat Co.

The only important company owned by Argentine capital is the Sansinena Co., which owns a plant at La Negra on the banks of the Riachuelo, a plant at Bahia Blanca, and the Frigorifico Uruguay near Montevideo. The company also owns butcher shops in and around Buenos Aires. The company has an authorized and issued share capital of \$4,500,000 (Argentine gold).

Swift & Co. were the first United States packers to enter the Argentine field. They control the Cia. Swift de la Plata in Argentina and Cia. Swift de Montevideo, S. A. The La Plata Storage Co. reported paid-up capital of \$7,500,000 (gold) in 1915.

Armour & Co. opened a new frigorifico in 1915 at La Plata, said to be the largest in South America. The authorized capital of the company is \$10,000,000 Argentine gold. The company is, technically, an Argentine concern and is known as the Sociedad Anonima Frigorifico Armour de la Plata.

The Sociedad Anonima de La Blanca is also an Argentine company controlled by Morris and Armour. The capital of this company authorized, issued and fully paid up, is \$4,500,000 Argentine gold.

The Frigorifico Wilson de la Argentina at Valentin Alsina, Province of Buenos Aires, is also controlled by United States capital. It was formerly known as El Frigorifico Argentina; later it was leased to Sulzberger & Sons, of Chicago, and was known as the Frigorifico Argentino Central; from the Sulzberger people it passed on to its present owners.

Another company of recent origin is the Frigorifico Argentino de Tierra del Fuego, established in February, 1918, with an authorized capital of \$1,200,000.

Brazil.

While Argentina is considering ways and means to increase its herds in order to supply the packing houses, Brazil is endeavoring to increase the number of packing houses in order to utilize its plentiful supply of stock. The live-stock census of 1913 is thought by some authorities to underestimate the actual number in the country. This census shows 30,705,000 head of cattle, 10,653,000 sheep, and 18,399,000 hogs. In order to improve the strain of the cattle, the Brazilian Government is offering every encouragement to breeders.

In 1914 the first shipment of frozen meat was made from Brazil. Santos and Rio de Janeiro are the two ports of shipment, the former enjoying first rank until 1917. It is predicted by some that Sao Paulo will be the future center of the meat-packing industry of

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Brazil. Italy is the chief purchaser of Brazilian frozen and chilled meat. The following figures comparing the exports of chilled and frozen meats for 1915, 1916 and 1917 appeared in Revista de Comercio e Industria de Brazil, for February, 1918: 1915, 8,514 metric tons; 1916, 33,661 tons; 1917, 66,452 tons. The exports by ports in 1917 were: Rio de Janeiro, 37,317 metric tons; Santos, 29,135 tons. The exports by countries of destination in 1917 were: Egypt, 5,936 metric tons; United States, 950 tons; France, 5,184 tons; Great Britain, 3,960 tons; and Italy, 50 tons.

American and British packers are studying the possibilities of extending the cattle-raising and meat-packing industry in Brazil. Among those already having interests in this country are Armour, Swift, and the Wilson Co., representing United States capital; and the British & Argentine Meat Co. and the Union Cold Storage Co., representing English interests.

Paraguay.

Cattle raising is one of the chief industries of Paraguay, although it has never been developed in the same scientific manner as it has been in Argentina. "El Paraguay Moderno," 1915, gives the following interesting figures of live cattle exported to the Argentine frigorificos prior to 1915: Paraguay exported 11 head in 1910, 9,377 in 1911, 4,661 in 1912, 36,564 in 1913, and 24,385 in 1914.

There are a number of small slaughtering establishments and saladeros in the country in addition to the three packing houses controlled by American capital. Swift & Co. has recently opened a new frigorifico, the "Compania Paraguaya," near Asuncion. This plant now has a slaughtering capacity of 100 animals daily, but expects to increase the number to 300 head in the near future. The meat is shipped to the Swift plant in Buenos Aires. The Central Products Co., the largest plant now operating, is American-owned. Wilson & Co., Chicago, has recently purchased the "Fabrica San Salvador."

Uruguay.

The cattle census of Uruguay taken in 1916 shows a total of 7,942,212 head. Stock raising is one of the oldest and most profitable industries of the country and its kindred industry, meat packing, is also of long standing. In 1915 there were 22 establishments devoted to the various branches of the meat-packing industry. These included salting, freezing, extracting, canning and other branches.

The exports of meat and meat extracts for the years 1914 to 1916 follow: 1914, \$20,306,525; 1915, \$31,365,275; and 1916, \$27,471,532.

The destination of meat exports from Uruguay for 1917 were:

Meat.	To United Kingdom.	To United States.	To Continent.
Frozen beef (quarters).....	255,575	13,962	756,192
Chilled beef (quarters).....	2,549	.....	.....
Lamb (carcasses)	4,020	690	.....
Mutton (carcasses)	51,107	.....	29,449

The first freezing plant in Uruguay was the Frigorifica Uruguaya, established at Montevideo in 1914. It has a present daily capacity of 1,200 steers and 4,000 sheep. The capitalization in 1916 was \$4,136,000. In 1911 Swift bought three jerked-beef plants located near Montevideo and commenced the erection of a freezing plant with a capital of 4,000,000 pesos. The company soon became a leading factor in the Uruguayan cattle market and has a present capacity of 2,000 steers and 3,000 sheep per day. A Morris plant,



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These are America's Thrift Foods and represent the highest quality in nourishment and flavor. They save time, are practically without waste and offer the widest variety, for the line includes

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known as the Frigorifico Artigas, is now under construction and will have a capacity of from 1,000 to 2,000 steers, 2,000 sheep and 500 hogs per day. Montevideo is furthermore used as the shipping point for the products of the Armour plant at Santa Anna, just across the Brazilian border.

Colombia.

According to reliable estimates, Colombia has approximately a million head of cattle. During the latter part of 1915 a trial shipment of 850 steers was made to Panama and weekly shipments have been made since. The opening up of this market has stimulated the cattle industry of Colombia, making it one of the most profitable in the country.

Under the provisions of the act of November 17, 1917, the Colombian Government offers a subsidy of 10,000 pounds sterling to the first packing house established either on the Atlantic or Pacific coast and complying with the other provisions prescribed by the act. These conditions include a loan of 150,000 pounds, to be advanced by the packer to cattle breeders and fatteners at an interest not to exceed 9 per cent and for a period of not less than five years. The packing house must have a capacity of 50,000 head of cattle and 2,000 smaller animals per year.

British, American and Swedish firms are reported to have made inquiries concerning this law, but, according to the latest official reports, the subsidy has not yet been granted to any firm. Colombia possesses vast pasture lands and is appreciably nearer the European and American markets than Argentina or

Brazil, two points fully realized by foreign investors. Its accessibility to the densely populated islands of the West Indies is also regarded as a factor of importance.

Venezuela.

There is at present one refrigerating plant in Venezuela, viz., the Venezuela Meat & Products Syndicate (Ltd.) of London. It is situated at Puerto Cabello, and in 1916 had a daily capacity of 300 heads. This output is being increased, and by August, 1918, the plant is expected to have a daily capacity of 2,000 head. The company holds an exclusive concession to pack meat for export trade. This privilege, however, expires next year, and may not be renewed. Notwithstanding, the company is investigating conditions with a view to buying lands for breeding purposes. Gen. Gomez has a monopoly on the sale of cattle for local consumption. Along the Orinoco there is land suitable for cattle raising and for the establishment of a meat-packing plant. These possibilities will probably not be overlooked by foreign capital.

Grocers Seek Larger Volume Sales.

A co-operative advertising campaign for the purpose of educating the public to buy groceries in volume, in order to reduce handling cost and eventually to bring about lower prices to the consumer, is being planned by grocers of Cincinnati, organized as the Retail Food Dealers' Association of the Chamber of Commerce. H. Serkovich, secretary of the association, is chairman of the committee in charge. It is planned to use space in Cincinnati newspapers during the campaign, which has not yet been fully arranged in detail.

Warm Weather Nut Margarine

By a new and secret process we can now offer

Farrell's
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NUT MARGARINE

with the same texture and melting point as creamery butter.

The ordinary Nut Margarines have a much lower melting point than butter, and in warm weather will melt during the meal. The product of a strictly sanitary factory. The illustration on page 00 of this issue is of one of the rooms in our new Chicago plant.

Churned in pasteurized milk

Contains no animal fats

Made from the delicious juice of cocoanuts.

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SITUATION WANTED.

Young man, age 32, excellent executive ability, hard worker, wide range of business and production experience along food manufacturing lines covering period of ten years, desires position where opportunity for future development obtains. Married; college graduate; technical education; perfect reputation for integrity, ability and ambition. Can become a valuable part of your organization. Address "Producer," in care of THE AMERICAN FOOD JOURNAL, Chicago.

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New Food Commissioner for Arizona.

Mr. C. A. Bosworth was recently appointed inspector of the State Laboratory of Arizona to succeed Miss Jane H. Rider, who resigned in June in order to enter the hospital branch of military service.

Specialty Manufacturers Convene in November.

At a recent meeting of its board of directors it was decided to hold the tenth annual convention of the American Specialty Manufacturers' Association in Cleveland, Ohio, November 20 and 21, 1918.

British Government Requisitions Condensed Milk.

Consul General Robert P. Skinner, stationed at London, England, recently reported that effective April 1, 1918, the British Food Controller had ordered placed at his disposal all supplies of canned condensed milk not inferior in quality to United States standard condensed milk.

Dr. John Harper Long Dies.

Late in June the food industry suffered a great loss in the death of Dr. John Harper Long of Northwestern University. Those who recall the stormy days following the enactment of the Food and Drugs Act will recall Dr. Long's valiant services as a member of the Referee Board. Upholding the cause of scientific truth against the forces of tradition and blind partisanship concerning the use of benzoate soda and similar moot points called for rare courage, which the late Dr. Long had in abundance.

Acting in Alaska for Food Administration.

The United States Food Administration issues the following:

L. L. Harding, executive secretary under Judge Royal A. Gunnison, Federal Food Administrator for Alaska, who died recently of apoplexy, will assume the position of acting food administrator until a successor has been appointed, the Food Administration announces.

In Judge Gunnison's death the Food Administration and the Nation have lost a loyal and efficient public servant, whose place can be filled only with difficulty. His work has been of the highest order, particularly that relating to fishery problems in the Northwest.

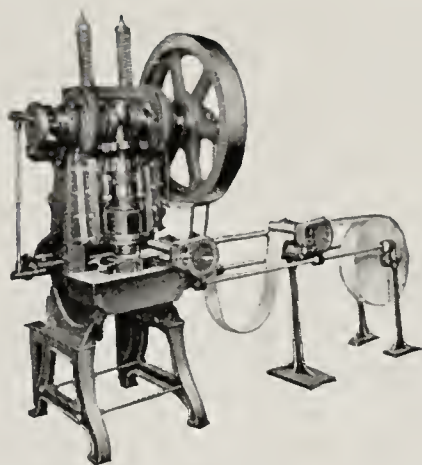
Speculation in Butter to Be Stopped.

The Food Administration recently issued the following:

After holding conferences with representatives of the trade the United States Food Administration has issued special regulations designed to prevent undue speculation in butter, to make the route from the producer to the consumer as short as practicable, and to limit profits on cold storage butter.

Hereafter licensees dealing in cold storage butter will sell it at a price based on the actual cost and not on what it would cost to replace it. The dealer in figuring cost can not include anything except the purchase price, transportation charges, if any, actual storage, and insurance charges, interest during the storage period, and the cost of printing if the butter is put into prints from tubs or cubes.

Dealers may not add to the cost price more than 1 cent a pound on carloads, 1¼ cents on lots between 7,000 pounds and a carload, 1¾ cents on sales of 700 to 7,000 pounds, and not more than 2¾ cents on sales less than 700 pounds. If held in storage for not less



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than two calendar months they are permitted to add not more than 1 cent a pound to their selling profit and $\frac{1}{4}$ cent a pound additional may be added for each calendar month thereafter, the total not to exceed 2 cents a pound in any case. These margins do not mean that the dealer can go to the limit. They were made to prevent speculation and are wide enough to provide for cases where the cost of doing business is high. Even if a dealer keeps within these limits and makes an undue profit he is violating the food control act.

When a manufacturer performs the services of a wholesaler or jobber his transactions come under the rules governing men in those lines of business.

Certain resales are allowed, but any that bring a profit to the dealer without corresponding service will result in a revocation of his license and other penalties provided by the law.

These butter rules follow the general trend of the cheese rules recently issued. They are in line with the general principles of the food administration which aim to prevent the taking of exorbitant profits, to prevent undue speculation and to provide for the handling of foods without unnecessary delays or expense.

Stockyard Receipts in June.

Receipts of cattle, hogs and sheep at 36 cities in June show increases over receipts in June, 1917, according to the monthly report just issued by the Bureau of Markets. The June totals for the two years covering all the larger cities, with 1918 figures given first are: Cattle, 1,580,920, 1,544,299; hogs, 2,596,619, 2,472,090; and sheep, 1,247,115, 1,042,235. Although previous monthly reports have shown increases in one or two classes of live stock, it is pointed out that this is

the first time increased receipts are reported for all three classes of live stock, cattle, hogs and sheep in the same month.

Hearing on Stock Yards Licensing.

At the suggestion of Secretary Houston and at the invitation of the Chief of the Bureau of Markets the subcommittee on live stock of the National Advisory Agricultural Committee met June 28 with representatives of the Department of Agriculture to give suggestions relative to the tentative draft of the proposed rules and regulations governing the licensing of stock yards under the President's proclamation of June 17. Those present at the meeting included: Henry C. Stuart, Virginia; Marion Sansom, Texas; W. L. Brown, Kansas; John Grattan, Colorado; Eugene Funk, Illinois; N. H. Gentry, Missouri; C. W. Hunt, Iowa; Charles J. Brand and L. D. Hall, of Washington, D. C.

Sardine Canneries Inspection.

A system of inspection for sardine canneries of Maine and Massachusetts similar to that already in successful operation in California has been established by the Food Administration. All canners in those States have been notified that Dr. H. M. Loomis of the Food Administration will act as chief inspector, with headquarters at Eastport, Me. The appointment was made by the Federal food administrators of the States concerned at the request of the United States Food Administration.

Dr. Loomis will appoint deputy inspectors, who will have authority to visit all plants. A circular letter has been sent to packers, asking that in view of the general

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war situation and the agreements as to "reasonable maximum prices" recently entered into with the Food Administration, they give the plan their heartiest co-operation.

The Canada Food Board has notified the Food Administration that it concurs in accepting the prices recently approved in this country, which will make for uniformity on both sides of the boundary line.

The Food Administration was given regulatory powers over packers by the Food Control Act and expects their co-operation to make unnecessary the revocation of licenses and infliction of penalties authorized for infraction of its regulations. It is expected that the plan will lead to elimination of wasteful practices and relieve the packers of the necessity to make periodical reports concerning stocks, costs, selling prices and other business details.

The regulations of the Food Control Act, so far as they concern the sardine industry, deal with the price and quality of raw fish; unfair practices, such as short measure; sanitary conditions of factories; elimination of unnecessary waste; proper fill of cans; spot and future sales; and reports of stock on hand.

Canada Prohibits Importation of Perishables.

The Canadian Government has issued an Order in Council prohibiting the importation from the United States of less essential foodstuffs. This action has not been taken because there is a surplus of food in Canada, but was necessitated in order to re-establish Canada's trade balance. Under war conditions Canadian imports from the United States have shown heavy increases, far overbalancing her exports to this country. In order to meet this the Canadian War Trade Board has put restrictions upon unnecessary imports.

So far, only highly perishable products are placed on the list of prohibited foodstuffs. The new order is effective only on goods shipped from the point of origin in the United States on or after June 16.

The foodstuffs which are now under the ban are as follows: blackberries, gooseberries, currants, cucumbers, watermelons, artichokes, shallots, green peas, romaine, parsnips, salsify, pomegranates, quinces, nectarines, mangoes, egg plant, green peppers, brussels sprouts, asparagus, mushrooms, parsley, endive, beets and turnips. With these exceptions, foods may be brought into Canada, as at present, under a blanket license.

Cheese Rules and Regulations.

Special regulations governing manufacturers, dealers, brokers and commission merchants in cheese were announced on June 12, 1918, by the U. S. Food Administration. The regulations are based upon recent conferences between representatives of the trade and officials of the Food Administration.

"Reasonable" margins of profit are established for dealers, except retailers, who cannot be controlled under the Food Control Act; unjustifiable resales within the trade are prohibited; and definite margins are established for cheese placed in storage. Commissions shall not exceed $\frac{1}{2}$ cent per pound in sales of American or Cheddar cheese, nor may the selling price be increased because of the commission, which must be absorbed in the allowed margins of advance over cost. Only those who perform a necessary function in distributing cheese will be allowed to figure in any sales or purchases.

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Margins of advance over cost have been established only for the intermediate merchants, not including manufacturers or retailers. On car-lot sales the advance may be $\frac{3}{4}$ cent per pound; less than car lot, but as much as 7,000 pounds, $1\frac{1}{4}$ cents; less than 7,000 but as much as 500 pounds, $1\frac{3}{4}$ cents; less than 500 pounds, 3 cents.

On cheese stored for more than 30 days a maximum of $\frac{1}{8}$ cent per pound may be added each month that the cheese is in storage, the total in no case to exceed 1 cent per pound.

Production of Milk of Low Bacterial Content.

Health officers and dairy inspectors are urged to study carefully Department of Agriculture Bulletin No. 642, recently issued, the title of which is, "The Four Essential Factors in the Production of Milk of Low Bacterial Content." It is a technical and scientific treatise, of special interest to dairy instructors, health officers and sanitarians.

As indicated in the title, the subject is restricted to those factors which influence the bacterial count of milk, although in the introduction factors influencing the sanitary quality of milk are also discussed. Of the four phases of this subject, only one is considered, and that is, "Factors concerned in the production of milk which is practically free from visible dirt and which has a low bacterial content." "While it is realized that many conditions under which milk is produced may affect its quality from a sanitary or economical stand-

point, no attempt was made to study them unless they could be measured in terms of the bacterial count."

The investigation covered a period of more than two years. The objects were to study fresh milk at the time of milking and "to obtain conditions as bad as possible in an experimental barn, in order to improve them, and also to determine the number of bacteria in fresh, dirty milk." In all these experiments large numbers of samples of fresh milk were studied and identical conditions were often repeated. Seven different sets of experiments were conducted, beginning with filthy conditions in the production of the milk and ending with clean methods.

This bulletin shows that the three most essential factors in the production of milk of low bacterial content are, in the order named: Sterilized utensils; clean cows, with clean udders; and the use of the small-top pail. The practical value of these essential factors were proved by using them on six average daily farms.

"The results of the experiments indicate that it is possible for the average dairyman on the average farm, without expensive barns and equipment, to produce milk (practically free from visible dirt) which when fresh has a low bacterial count. By the use of the three simple factors, namely, sterilized utensils, clean cows with clean udders and teats, and the small-top pail, it should be possible on the average farm to produce milk which corresponds closely to milk as it leaves the udder of the cow. A fourth factor, of holding milk as near 10 degrees C. (50 degrees F.) as possible, is also absolutely necessary.

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BOOK REVIEWS

LIPPINCOTT'S HOME MANUALS: SUCCESSFUL CANNING AND PRESERVING, PRACTICAL HANDBOOK FOR SCHOOLS, CLUBS AND HOME USE. By Ola Powell, U. S. Department of Agriculture Assistant in Home Demonstration Work in States Relations Service. Edited by Benjamin R. Andrews, Ph. D. Teachers' College, Columbia University. J. B. Lippincott Co., Philadelphia, Pa., July, 1917. 371 pp. 4 colored plates. 164 illustrations. \$2.

This book emphasizes not only the importance of production and conservation of foods, but also the necessity for the most economical method of preservation. A history of the development of scientific canning from the time of the Napoleonic Wars, when a prize was offered by the French Government for a method of preserving foods for use on ships and in military stores, gives a rather unique interest to the book. Chapters on bacteriology as applied to canning; on the various methods of canning; on the dietary importance of fruits and vegetables; on the Canning Club Organization; on the business end of canning, with specific directions as to standards, marketing, prices and records; and on teaching scientific canning—all splendidly illustrated or explained by diagrams, make up a book on this subject of more than ordinary weight. Especially excellent is the abundant use of illustrations, diagrams and tables, and the scholarly worth of the book is evidenced in the bibliography ending each chapter. The teacher will also find commendable the list of questions reviewing the several chapters. No matter from what angle the reader wishes to approach the subject of canning, this book will be found to be most useful.

THE PREVENTION OF BREAKAGE OF EGGS IN TRANSIT WHEN SHIPPED IN CARLOTS, by M. E. Pennington, Chief, Food Research Laboratory, H. A. McAleer, Investigator in Poultry and Egg Handling, and A. D. Greenlee, Assistant Chemist, assisted by F. X. Dailey and H. C. Albin. Bulletin No. 664, Bureau of Chemistry, U. S. Department of Agriculture. Ten cents.

This pamphlet should be read in connection with the recently published report of an investigation covering this point conducted by the National Poultry, Butter and Egg Association, the headquarters of which are in Chicago.

THE APPLICATION OF OPTICAL METHODS OF IDENTIFICATION TO ALKALOIDS AND OTHER ORGANIC COMPOUNDS, by Edgar T. Wherry, Crystallographer. Bulletin No. 679, Bureau of Chemistry, U. S. Department of Agriculture. Five cents.

The use of immersion fluids of various refractive indices as a means of identifying crystals under the microscope has from time to time been mentioned in these columns. The present bulletin will be of interest and assistance to all microscopists.

SOME NUTRITIVE PROPERTIES OF CORN, by Josiah Simpson Hughes of the Kansas State Agricultural College. Technical Bulletin No. 5, Agricultural Experiment Station, Manhattan, Kans.

The author states that corn germ contains some of the food accessories called fat-soluble A by McCollum, but very little of the water soluble B.

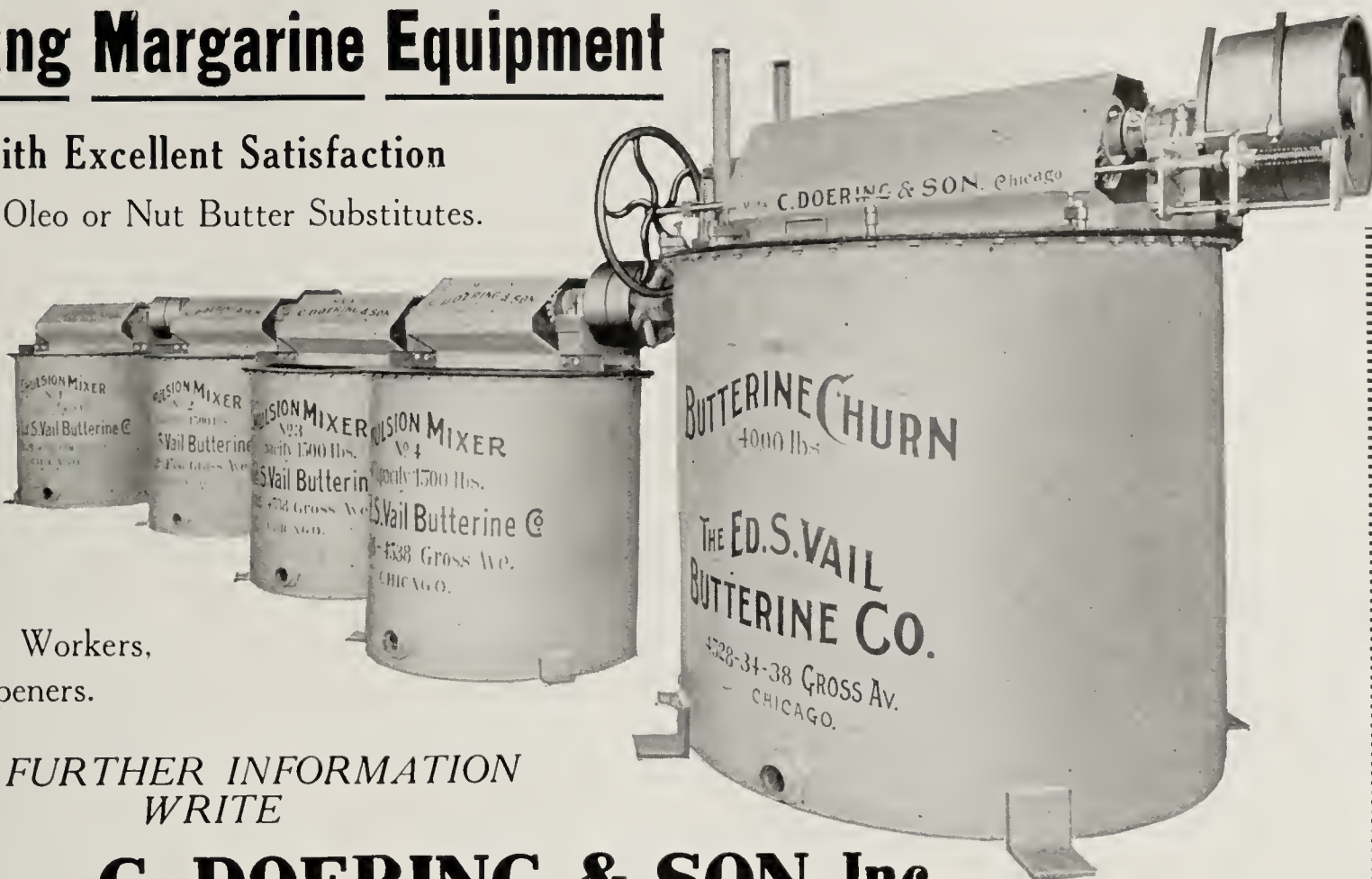
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LEGAL WEIGHTS (IN POUNDS) PER BUSHEL OF VARIOUS COMMODITIES, corrected to May 9th, 1918, Circular No. 10 of the Bureau of Standards, U. S. Department of Commerce. Price five cents.

SOY BEANS AS HUMAN FOOD, by Arao Itano. Bulletin No. 182, Massachusetts Agricultural Experiment Station, Amherst, Mass.

As is well known, soy beans have for generations furnished the chief source of protein to the people of Japan and China. Dr. Itano is Assistant Professor of Microbiology at the Massachusetts Agricultural Station.

Pamphlets on Food Subjects.

Practical Suggestions for the Preparation of Frozen and Dried Eggs. U. S. Bureau of Chemistry circular No. 98. By M. E. Pennington, Chief Food Research Laboratory. 12 pages, 3 plates. Price 5c.

Absorption and Fate of Tin in the Body. By William Salant, J. B. Risger and E. L. P. Treuthardt, Pharmacological Laboratory, U. S. Bureau of Chemistry. Reprinted from Journal of Biological Chemistry, Vol. XVII, No. 2, March, 1914.

Public Health Administration in Colorado. U. S. Public Health Service Reports, Reprint No. 383. By Carroll Fox, Surgeon, U. S. Public Health Service. 43 pages.

The Meat Inspection Service of the United States Department of Agriculture. Separate from the Year-book of the Department of Agriculture, No. 714. By

George Ditewig, Meat Inspection Division, Bureau of Animal Industry. 21 pages, 11 plates.

The Pomgranate. California Agricultural Experiment Station, Bulletin No. 276. By Robert W. Hodgson. 30 pages, illustrated. Mainly devoted to cultivation. Contains brief account of uses of the pomgranate.

Some Fundamental Considerations Affecting the Food Supply of the United States. California College of Agriculture Circular No. 163. By Thomas Forsythe Hunt. 11 pages.

Food Economics; a Series of Special Bulletins for the Housewife. Published by the New York City Bureau of Public Health Education. 22 pages.

Lye Peeling; the Use of Lye in the Preparation of Foods. By K. G. Bitting, M. S. Published by the Research Laboratory, National Canners Association, Washington. A study of the methods and effects of lye peeling on fruit, with descriptions of patented peeling devices. 23 pages. Illustrated.

Deterioration in Asparagus. By K. G. Bitting, M. S. Published by Research Laboratory, National Canners Association, Washington. 23 pages, illustrated.

Pacific Coast Salmon Packers Register. Contains directory of salmon packers of the Pacific coast, directory of salmon brokers, and list of packers' brands and labels. Also contains tables showing comparative pack by varieties for 1916, and districts, with comparative statistics for a period of five years. Published by the Salmon Packers Register, Lowman Bldg, Seattle, Wash. Price \$1.00.

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Cordials Not Necessarily Alcoholic.

A suit-at-law recently decided in Nebraska is of interest because of the fact that it concerned a non-alcoholic cordial, blackberry flavor, which was held by the State to be misbranded, the claim being that cordials are ordinarily considered alcoholic drinks and that the use of the phrase "blackberry flavor" would imply that the cordial had been made from the juice of the blackberry, which was not the fact. A letter from the Nebraska Agricultural Department submitted in evidence showed that the label met the requirements of that Department, and the Appellate Court dismissed the case.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,265,130. Process of curing olives. Homer C. Staley, Hayward, Cal., assignor to Hunt Brothers Co., San Francisco, Cal.

1,265,369. Baking-powder. Arnold H. Peter, New York, N. Y., assignor to Royal Baking Powder Co., same place.

1,265,375. Dough-mixing machine. Bryan D. Pinkney, Cincinnati, Ohio, assignor to The Triumph Mfg. Co., same place.

1,266,201. Food compound for making custard. Henry D. Boddington, Los Angeles, Cal.

1,266,204. Apparatus for cooking canned vegetables. Joseph Brakeley, Freehold, N. J.

1,266,447. Pineapple-slicer. George L. Fraser, Honolulu, Hawaii, assignor to California Packing Corporation, San Francisco, Cal.

1,266,448. Process of making rice breakfast food. Hazime Fukuda, Arminto, Wyo.

Exotic Substitute Flours.

In the opinion of the staff of the Hawaii Agricultural Experiment Station, flour made from the cassava root is the most promising substitute for wheat flour, inasmuch as such flour combines attractive qualities with the lowest cost of production. Mr. Maxwell O. Johnson, chemist, has been conducting comprehensive experiments with many alternative starchy products available in Hawaii, as is indicated by the accompanying chart:

Constituents—	Cassava flour, pct.	Whole wheat flour, pct.	Patent wheat flour, pct.	Sweet potato flour, pct.	Taro flour, pct.	Banana flour, pct.
Water	12.47	9.07	12.32	11.43	12.09	11.10
Crude protein	1.75	14.35	12.44	6.12	2.45	3.55
Fat (ether extract).....	0.32	2.74	1.05	0.55	0.25	0.83
Nitrogen-free extract (starch, sugar, etc.).....	82.27	70.37	75.28	77.09	82.68	80.79
Crude fibre	1.79	1.68	0.33	2.16	1.07	1.50
Ash	1.40	1.79	0.34	2.65	1.46	2.23

PATENTS

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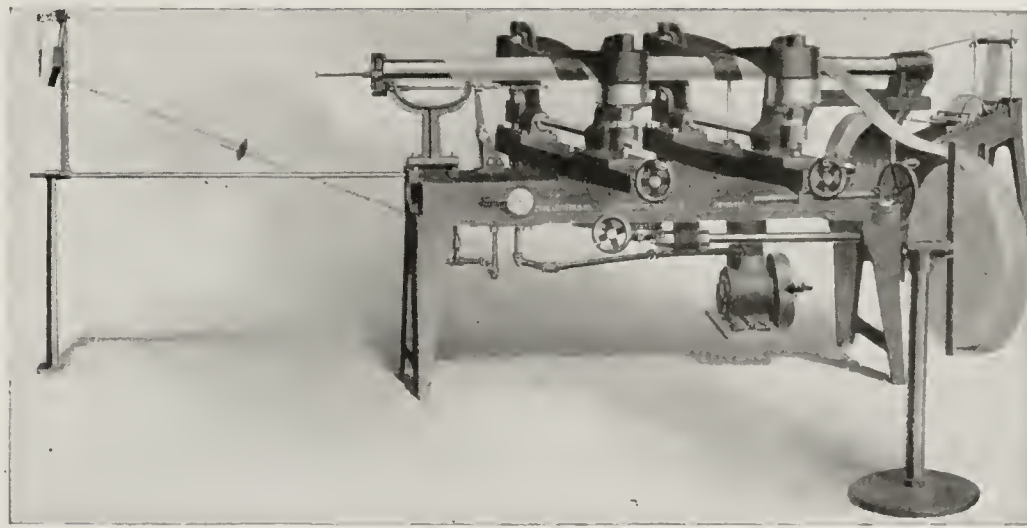
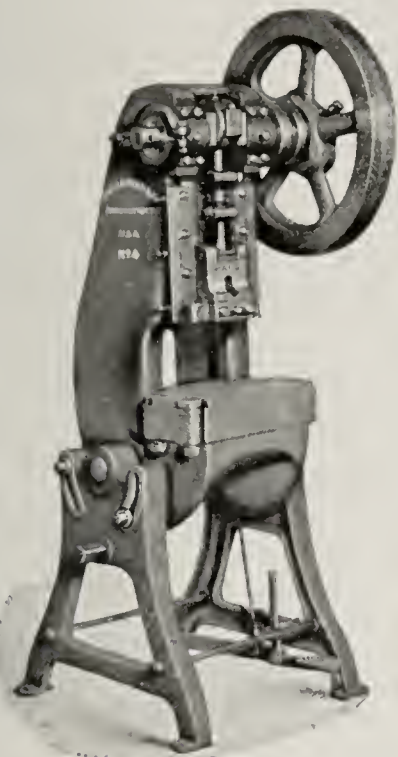
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Corn Sirup for Canning.

Corn sirup may be used in canning and in making jellies, jams and marmalades and fruit butters, according to specialists of the U. S. Department of Agriculture. Varying amounts of corn sirup are used with sugar. The sirup gives a modified flavor to products so it should be tried out in small quantities at first to suit the individual tastes. It combines most satisfactorily with strong flavored fruits such as pineapple and cherries. The amount used must be determined by the kind of fruit and the strength of the sirup.

That corn sirup enters largely into several of the more common foodstuffs consumed in America is evidenced by the fact that during 1917 a total of 541,000 tons was manufactured in this country. Of this amount 70,000 tons were exported. The largest single item is represented in the total used by the sirup manufacturers, 230,000 tons, or more than three times the volume exported. Confectioners come next, with a total of 191,000 tons to their credit. The balance expressed in pounds was distributed as follows: Manufacturers of jellies and jams, 25,000,000; sales to miscellaneous buyers, 20,000,000; bakers and supply houses, 19,000,000; brewers, 15,000,000; technical purposes, 12,000,000; tobacco manufacturers, 9,000,000.

Brine-Cooled Refrigerator Cars.

A new system of automatic brine circulation for refrigerator cars is being tested on shipments of perishable food coming into Chicago. This system circulates iced brine in overhead pipes, utilizing the swaying motion of the car. Refrigeration throughout the car is said to be uniform, can be regulated to suit the

character of the shipment, and there is a saving of 20 per cent freight space due to absence of ice compartments. Results thus far indicate a marked saving in icing costs and a considerable reduction in dead tonnage.

Trade-Marked Bottles Protected by the Courts.

The County Court of Monroe County, New York, recently handed down decisions in two cases on appeal from the Municipal Court of the City of Rochester, in which C. H. Evans & Sons, brewers of Hudson, N. Y., were the plaintiffs and Anna Goldstein defendant in one and Michael Pokowsky defendant in the other. These actions were brought in the Municipal Court to recover penalty of \$100 under the provisions of the General Business Law, the plaintiff alleging that the defendants violated the law by filling certain bottles containing the registered trade-mark of C. H. Evans & Sons, with certain "soft drinks." The plaintiff proved that it had duly complied with the provisions of the law by filing in the office of the Secretary of State a description of its trade-mark and name blown on the bottles as follows: "Evans Ale Trade Mark, Hudson, N. Y.," and filing the same in the office of the Clerk of the County of Columbia, and publishing the description in a newspaper in the County of Columbia.

The plaintiffs succeeded in the Municipal Court in each case and in getting a judgment for the \$100 penalty and costs, and the defendants thereupon appealed to the County Court of Monroe County, and that court has since sustained the decision of the Municipal Court.

Notices of Judgment Under the Food and Drugs Act

(Continued from the preceding issue.)

5284, 5285, 5286, 5287, 5288, 5289 and 5290. Adulteration of eggs.

Decomposed eggs were held to be adulterated. In each instance that portion of the eggs fit for human consumption was released to the claimants under bond, and the balance destroyed.

5291. Misbranding of cottonseed meal and cake.

Misbranding was alleged because of guaranteed analysis of "7.42 to 8% ammonia, 38.62 to 41% protein, 6 to 6.42% nitrogen, and 10 to 12% crude fiber" was not substantiated by laboratory analysis which showed 6.98% ammonia, 35.9% protein, 5.74% nitrogen and 13.3% crude fiber. On March 15, 1917, the defendants pled guilty and were fined \$50.00 and costs.

5292. Adulteration and misbranding of lithia water.

Adulteration was alleged because of filth, and misbranding because of the false claim that the water was a "trusty remedy for the cure of gout and rheumatism." On October 3, 1916, no claimant having appeared, the product was destroyed.

5293. Adulteration of tomatoes.

Decomposed canned tomatoes were held to be adulterated. On November 17, 1916, no claimant having appeared, the product was destroyed.

5294. Adulteration and misbranding of "Carnival Brand Cocoa."

Cocoa to which had been added not less than 35% of cocoa shells was held to be adulterated; misbranding because a mixture of cocoa and cocoa shells was labeled "Cocoa." On March 19, 1917, the defendant pled guilty and was fined \$25.

5295. Adulteration of condensed milk.

Decomposed condensed milk was held to be adulterated. On October 17, 1916, no claimant having appeared, the product was destroyed.

5296. Adulteration of canned vegetables.

Decomposed tomatoes, corn, pumpkin, sweet potatoes, beans and sauerkraut were held to be adulterated. On October 17, 1916, no claimant having appeared, the products were destroyed.

5297. Adulteration and misbranding of "Black's Perfection Sweet Milk Chocolate."

Adulteration was alleged because analysis showed the product to be a skimmed-milk cocoa preparation; misbranding because such a mixture cannot truthfully be called "sweet milk chocolate." On March 21, 1917, the defendants pled nolo contendere and were fined \$25 and costs.

5298.—Adulteration of grapefruit.

Immature grapefruit which had been sweated to color it so as to simulate mature fruit was held to be adulterated. On October 17, 1916, no claimant having appeared, the product was destroyed.

5299. Adulteration and misbranding of "Diamond Brand Tomato Pulp."

Decomposed tomato pulp was held to be adulterated and misbranding was alleged because of short weight. On April 4, 1917, the defendant pled guilty and was fined \$20.

5300 and 5301. Adulteration of eggs.

Substantially the same as No. 5284.

5302. Adulteration of tomatoes.

Substantially the same as No. 5293.

5303. Misbranding of cottonseed meal and cake.

Misbranding was alleged because the guaranteed analysis of "protein, not less than 41%" was not substantiated by laboratory analysis, which showed approximately 37.1%; also the package failed to bear a statement of the net weight of the contents. On April 4, 1917, the defendant pled guilty and was fined \$100 and costs.

5304. Adulteration and misbranding of pork and beans.

Decomposed canned pork and beans was held to be adulterated and misbranding was alleged because of short weight. On March 22, 1917, the defendant pled nolo contendere and was fined \$135 and costs.

5305. Misbranding of "Continental Gluten Feed."

Misbranding was alleged because the stated analysis of "protein 29 to 34%, fat 12.5 to 14.5%" was not substantiated by analysis which showed 25.5% protein and 7% fat (ether extract). On April 20, 1917, the defendant pled

nolo contendere and was fined \$250 and costs.

5306. Adulteration of grapefruit.

Adulteration was alleged because immature grapefruit had been "colored, coated and stained" so as to simulate mature fruit. On October 17, 1916, that portion of the grapefruit free from adulteration was released to claimant under bond and the portion unfit for food purposes, destroyed.

5307. Adulteration of canned apples.

A shipment of canned apples of which "practically all" were swells and leakers was held to be adulterated, the product being decomposed. On November 17, 1916, no claimant having appeared, the product was ordered destroyed.

5308. Adulteration and misbranding of evaporated milk.

Milk which had been but partly evaporated was held to constitute adulteration when substituted for evaporated milk; misbranding being alleged because partly evaporated milk was termed "evaporated milk." On November 20, 1916, claimant having admitted the allegations the product was released under bond to the claimant under the stipulation that the milk should be truthfully relabeled.

5309. Misbranding of cottonseed meal and (or) cake.

Misbranding was alleged because the guaranteed analysis of "ammonia 7.5%, protein 38.6%, nitrogen 6%, and crude fiber 10%" was not substantiated by laboratory analysis, which showed in two samples, ammonia 7.37 and 6.74%, protein 37.9 and 34.6%, nitrogen 6.06 and 5.54%, and crude fiber 12 and 14.5%; and for the further reason that the packages were not labeled as to the net weight of the contents. On April 23, 1917, the defendants pled guilty and were fined \$150 and costs.

5310. Adulteration of canned apples.

Substantially the same as No. 5307.

5311. Adulteration of salted salmon.

Decomposed salmon was held to be adulterated. On November 3, 1916, no claimant having appeared, the product was destroyed.

5312. Adulteration of tomato pulp.

Decomposed tomato pulp was held to be adulterated. On November 3, 1916, no claimant having appeared, the product was destroyed.

5313. Adulteration of canned pears and tomatoes.

Decomposed canned pears and tomatoes were held to be adulterated. On December 8, 1916, no claimant having appeared, the product was destroyed.

5314. Adulteration of coffee.

Decomposed, unsound, and immature coffee beans, to which had been added foreign material and which consisted in part of a decomposed vegetable substance, was held to be adulterated. On March 10, 1917, the product was delivered to claimant under \$5,000 bond for recleaning under proper supervision.

5315. Misbranding of cottonseed meal or cake.

Misbranding was alleged because of guaranteed analysis of "protein 41% to 43%, crude fiber 10.5%" was not substantiated by laboratory analysis, which showed 36.2% protein and 12.8% crude fiber. On Jan. 30, 1917, the defendant pled guilty and was fined \$50.

5316. Adulteration of grapefruit.

Sweated, immature grapefruit was held to be adulterated. On October 19, 1916, the product was sorted under proper supervision, the good portion being released to the claimant and the unfit portion destroyed.

5317. Misbranding of cottonseed meal and cake.

Misbranding was alleged because of guaranteed analysis of "protein 41% to 43%, crude fiber not more than 12%" was not substantiated by laboratory analysis which showed 37.1% protein and 13.5% crude fiber. On March 5, 1917, the defendant pled guilty and was fined \$25 and costs.

5318. Misbranding of cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of "protein 41% to 43%, crude fiber 10.5% to 12%" was not substantiated by laboratory analysis, which showed 36.9% protein and 13.4% crude fiber. On December 30, 1916, the defendant pled guilty and was fined \$100 and costs.

The helpful shortening for 1918

YOU used to cook for your family. Now you must cook for your family and—your Uncle Sam.

If you use butter in cooking, you are cooking wrongly. For your country has said, "Don't use butter in cooking."

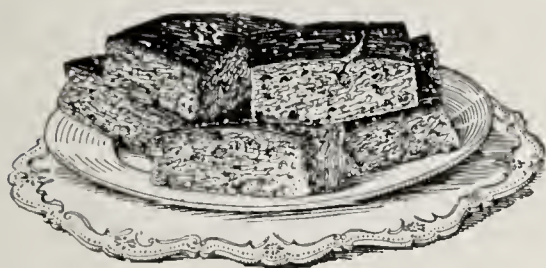
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Try it with any of your own recipes, using one-third less of economical Cottolene than you ordinarily take of butter or other shortenings.

Or try the new recipe we give here and see what unusual results Cottolene gives when used with the new war ingredients.



Recipe for LIBERTY CORN BREAD

1 rounded tablespoonful Cottolene	2½ rounded teaspoons baking powder
2 tablespoons light syrup	½ teaspoon salt
1 egg	1½ cups whole wheat or graham flour
1½ cups milk	2 cups white corn meal

Melt Cottolene and beat in the syrup. Add well-beaten egg, then the milk. Sift together the corn meal, flour, baking powder and salt and add to the first mixture. Beat thoroughly. Bake in hot oven about one-half hour. This quantity nicely fills a square pan 8 by 8 inches.

THE N. K. FAIRBANK COMPANY

Cottolene

"The Natural Shortening"

At grocers in tins
of convenient sizes

5319. Adulteration of canned apples.

Substantially the same as No. 5307.

5320. Adulteration of prunes.

Decomposed prunes were held to be adulterated. On December 8, 1916, no claimant having appeared, the product was destroyed.

5321. Adulteration of frozen egg yolks.

Decomposed egg yolks were held to be adulterated. On January 13, 1917, the product was delivered to claimant under bond in conformity with section 10 of the act.

5322. Misbranding of cottonseed meal and cake.

Misbranding was alleged because the guaranteed analysis of "protein 41% to 43%, fat 67%, crude fiber no more than 12%," was not substantiated by analysis, which showed in several samples, protein 36.5%, 39.4% and 37.6%, fat 5.7% and crude fiber 13.4%; and a further reason that the packages were not marked with the net amount of the contents. On March 5, 1917, the defendant pled guilty and was fined \$55 and costs.

5323. Adulteration of oats.

Adulteration was alleged because of the presence of wild oats partly wheat, chaff dust and small weed seeds. On November 8, 1916, claimants having admitted the allegations, the carload was released to them under \$1,000 bond, and with the understanding that it would be disposed of as oats and screenings.

5324. Adulteration of canned tomatoes.

Adulteration was alleged because of added water. On January 23, 1917, claimant having admitted the allegation, the 2,000 cases were released under bond and with the understanding that the goods should be relabeled in such manner as to show the presence of added water.

5325. Adulteration of canned blackberries.

Decayed blackberries were held to be adulterated. On November 9, 1916, no claimant having appeared, the product was destroyed.

5326. Adulteration of frozen eggs.

Decomposed frozen eggs were held to be adulterated. On October 28, 1916, the claimant consenting, the product was released under \$4,000 bond, and with the understanding that the unfit portion should be destroyed or denatured—the balance to be used for food purposes.

5327. Misbranding of cottonseed meal or (and) cake.

Misbranding was alleged because the guaranteed analysis of "ammonia 8% to 8.5%, protein 41% to 43%" was not substantiated by laboratory analysis, which showed in several samples: ammonia, 7.21%, 7.13% and 6.86%; protein, 37.1%, 36.6% and 35.3%. On April 4, 1917, the defendant pled guilty and was fined \$150 and costs.

5328. Adulteration of canned tomatoes.

Substantially the same as No. 5293.

5329. Misbranding of "Prime Cotton Seed Meal and Cake."

Misbranding was alleged because the guaranteed analysis of "protein 38.62% to .43 (43)% (not less than 38.62%), nitrogen 6 (6.15)% to 8 (6.50)%, (not less than 6 (6.15)% fiber 8% to 12% (not more than 12%)," was not substantiated by laboratory analysis which showed protein 35.9%, nitrogen 5.75% and fiber 15.4%. On April 5, 1917, the defendant pled guilty and was fined \$50.

5330. Misbranding of cottonseed meal and cake.

Misbranding was alleged because the guaranteed analysis of "ammonia not less than 8%, protein not less than 41%, nitrogen not less than 6.5%, and crude fiber not more than 10%" was not substantiated by laboratory analysis which showed: ammonia 6.48%, protein 33.3%, nitrogen 5.33% and crude fiber 16%. On April 5, 1917, the defendant pled guilty and was fined \$50.

5331. Adulteration of prunes.

Substantially the same as No. 5320.

5332. Adulteration of mussels.

Decomposed mussels were held to be adulterated. On December 4, 1916, no claimant having appeared, the product was destroyed.

5333. Adulteration of canned apples.

Substantially the same as No. 5307.

5334. Adulteration of evaporated apples.

Decomposed evaporated apples were held to be adulterated. On January 12, 1917, claimant having admitted the allegations, the product was released to him under a \$1,000 bond, with the understanding that the part fit for food should be so used, the balance being used for the manufacture of vinegar.

5335. Adulteration of oats.

Substantially the same as No. 5323.

5336. Adulteration of oats.

Substantially the same as No. 5323, with the exception that claimant under a \$2,000 bond was ordered to reclean the product under proper supervision.

5337. Adulteration of tomatoes.

Substantially the same as No. 5324, with the exception that the product was destroyed.

5338. Adulteration and misbranding of vinegar.

A product labeled "Pure Apple Vinegar Reduced to 45 gr." was held to be adulterated and misbranded because of the presence of distilled vinegar or dilute acetic acid. On December 8, 1916, no claimant having appeared, the product was destroyed.

5339. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "ammonia 8%, nitrogen 6.5%, protein 41% to 45%, fat 8%, crude fiber (maximum) 9%, was not substantiated by laboratory analysis, which showed ammonia 7.3%, nitrogen 6%, protein 37.57%, fat 6.8% and crude fiber 12.25%. On January 30, 1917, the defendant pled guilty and was fined \$50.

5340. Adulteration of butter.

Rancid butter was held to be adulterated. On November 22, 1916, no claimant having appeared, the product was destroyed.

5341. Adulteration of canned vegetables.

Decomposed vegetables in rusty, cut and swelled cans was held to be adulterated. On December 7, 1916, no claimant having appeared, the product was destroyed.

5342, 5343, 5344, 5345, 5346, 5347 and 5348. Adulteration of chestnuts.

Wormy and moldy chestnuts were held to be adulterated. In each instance, no claimant having appeared, the product was destroyed.

5349. Adulteration of tomato pulp.

Substantially the same as 5312, with the exception that the defendants pled guilty and were fined \$10.

5350. Adulteration of tomatoes.

Substantially the same as No. 5293.

5351. Adulteration of prunes.

Substantially the same as 5320.

5352. Adulteration of shell eggs.

Substantially the same as No. 5284, with the exception that no claimant having appeared, the product was destroyed.

5353. Adulteration and misbranding of olive oil.

A product labeled "Finest quality olive oil, Extra Pure—Guaranteed Absolutely Pure," was held to be adulterated and misbranded because of the presence of more than 50% of cottonseed oil. On January 31, 1917, no claimant having appeared, the product was destroyed.

5354 and 5355. Adulteration of tomatoes.

The presence of added water was held to constitute adulteration. In each instance the product was released under proper bond for disposal according to law.

5356. Adulteration of canned sweet potatoes.

Decomposed sweet potatoes were held to be adulterated. On January 25, 1917, the defendant pled guilty and was fined \$25.

5357. Adulteration and misbranding of cottonseed meal.

A feed labeled "Cotton Seed Meal" was held to be adulterated and misbranded because of the presence of cottonseed hulls, the analysis showing 32.06% protein, 14.65% crude fiber. On February 19, 1917, the defendant pled guilty and was fined \$200 and costs.

5358. Misbranding of Owl Brand—pure cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "ammonia 8% to 8.5%, protein 41% to 43%, nitrogen 6.5% to 7.5%, fiber 10%" was not substantiated by laboratory analysis, which showed ammonia 6.3%, protein 32.4%, nitrogen 5.18%, crude fiber 15.7%. On April 5, 1917, the defendant pled guilty and was fined \$50.

5359. Adulteration and misbranding of "Ideal Choc. Candy Cigars."

A product labeled as above and shown by laboratory analysis to contain an excessive amount of cacao shells was held to be both adulterated and misbranded. On March 16, 1917, the defendant pled guilty and was fined \$50.

5360 and 5361. Adulteration and misbranding of almond paste.

A product labeled as above, shown by analysis to contain apricot tissues, was held to be adulterated and misbranded. On April 20, 1917, the defendant pled guilty and was fined \$10.



THE ONLY PERFECTED NUT BUTTER



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5362. Misbranding of cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of "protein 38.42% (or '42%'), crude fiber 11% (or '9.5%'), was not substantiated by laboratory analyses, which showed in two samples, protein 37.25% and 37.44%, crude fiber 12.79% and 11.74%. On February 28, 1917, the defendant pled guilty and was fined \$50.

5363. Adulteration of butter.

Decomposition and filth were held to constitute adulteration. On January 29, 1917, claimant having admitted the allegations, the product was released under \$1,000 bond and with the understanding that the butter should, under proper supervision, be denatured by the addition of kerosene.

5364. Adulteration of white groats.

The presence of approximately 10 per cent of corn was held to constitute adulteration when found in a product labeled as above. On May 14, 1917, the defendants pled guilty and were fined \$25.

5365. Misbranding of cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of "protein 41% to 43%, fiber not more than 10.5% to 12%" was not substantiated by laboratory analysis, which showed protein 38.8% and crude fiber 13.1%. On April 5, 1917, the defendants pled guilty and were fined \$25 and costs.

5366. Adulteration and misbranding of olive oil.

A product labeled "Finest quality olive oil"—"1 Gallon Net" was held to be adulterated and misbranded because of the presence of 70% of cottonseed oil and a shortage of 6%. On January 22, 1917, no claimant having appeared, the product was destroyed.

5367. Adulteration and misbranding of olive oil.

A product labeled "Finest quality Olive Oil"—"½ Gallon Net" was held to be adulterated and misbranded because of the presence of 75% cottonseed oil and a shortage of 10%. On December 22, 1916, the product was released to claimant under a \$100 bond and with the understanding that the adulterated goods should be marked "Mixed with Cotton Seed Oil."

5368. Adulteration and misbranding of olive oil.

A product labeled as olive oil, but containing 75 per cent cottonseed oil and running 11 per cent short as to quantity, was held to be adulterated and misbranded. On January 22, 1917, no claimant having appeared, the product was destroyed.

5369. Adulteration and misbranding of vinegar.

A product labeled "Pure Cider Vinegar," but shown by laboratory analysis to contain added water and mineral matter, was held to be adulterated and misbranded. On March 5, 1917, the defendant pled nolo contendere and was fined \$50.

5370. Adulteration of canned apples.

Substantially the same as No. 5307.

5371. Adulteration and misbranding of vinegar.

An article labeled "Pure Apple Vinegar," but containing distilled vinegar or dilute acetic acid, was held to be adulterated and misbranded. On February 17, 1917, claimant having admitted the allegations, the product was released to the claimant under a \$500 bond, and with the understanding that legal relabeling would be effected.

5372 and 5373. Adulteration and misbranding of vinegar.

Substantially the same as 5371. Bond, \$1,000.

5374. Adulteration of tomatoes.

Substantially the same as No. 5354. Bond, \$2,000.

5375. Adulteration of butter.

Rancid butter, containing floor sweepings and chicken feathers, was held to be adulterated. On April 6, 1917, this case was tried and submitted to a jury of one, with the final result that the butter was released to the claimants, under \$2,000 bond, for renovation.

5376. Adulteration and misbranding of vinegar.

An article labeled "Guaranteed Cider Vinegar," but shown to contain distilled vinegar or dilute acetic acid, and artificial coloring, was held to be adulterated and misbranded. On January 1, 1917, no claimant having appeared the product was destroyed.

5377. Adulteration and misbranding of tomato conserve.

Decomposed tomato conserve was held to be adulterated; misbranding was alleged because the picture of the tomato on the label was not corrected by the statement in small type that the product was a blend containing 10% of fruits and vegetables other than tomatoes. On January 10, 1917, no claimant having appeared, the product was destroyed.

5378. Adulteration of tomatoes.

Substantially the same as No. 5354; bond, \$1,500.

5379. Adulteration of sardines.

Decomposed sardines were held to be adulterated. On April 26, 1917, claimants having consented, the product was released under \$500 bond and with the understanding that it would be examined under the proper supervision, and the unfit portion destroyed.

5380. Adulteration and misbranding of vinegar.

An article labeled "Guaranteed Cider Vinegar," but containing distilled vinegar or dilute acetic acid, and artificial coloring matter, was held to be adulterated and misbranded. On February 17, 1917, claimant having admitted the allegations, the product was delivered to him under \$500 bond for relabeling.

5381. Adulteration of cherries.

Decayed cherries in swollen and sprung containers were held to be adulterated. On January 22, 1917, no claimant having appeared, the product was destroyed.

5382. Adulteration and misbranding of vinegar.

An article labeled "Pure Apple Cider Vinegar," but containing distilled vinegar or dilute acetic acid, was held to be adulterated and misbranded. On January 31, 1916, claimant having consented, the product was delivered to him under \$100 bond, and with the understanding that the original label should be removed.

5383. Adulteration and misbranding of oranges.

Oranges labeled "Prize brand fancy," but decomposed, were held to be adulterated and misbranded. On January 4, 1917, no claimant having appeared, the product was destroyed.

5384. Misbranding of cottonseed feed.

Misbranding was alleged because the guaranteed weight of 100 pounds was not substantiated by test, which showed short weight. On December 14, 1916, claimant having admitted the allegations, the product was released to him under \$100 bond for relabeling.

5385. Adulteration of prunes.

Decomposed prunes were held to be adulterated. On January 18, 1917, no claimant having appeared, the product was sold at public auction, under the stipulation that purchaser should not use the prunes for human consumption.

5386. Adulteration of tomatoes.

Substantially the same as No. 5354; bond, \$1,000.

5387. Adulteration and misbranding of vinegar.

An article labeled "Pure Apple Cider Vinegar," but containing distilled vinegar or dilute acetic acid, was held to be adulterated and misbranded. On March 1, 1917, no claimant having appeared, the product was destroyed.

5388. Misbranding and alleged adulteration of vinegar.

Substantially the same as No. 5387. Product was released to claimant on \$600 bond for relabeling.

5389. Adulteration of oysters.

Oysters which were sour and indicating fermentation were held to be adulterated. On January 18, 1917, no claimant having appeared, the product was destroyed.

5390. Misbranding and alleged adulteration of vinegar.

Substantially the same as No. 5388; bond, \$150.

5391. Adulteration and misbranding of vinegar.

An article labeled "Fermented Cider Vinegar" and "Warranted to fill all requirements of the Pure Food Laws," an offer of \$100 being made for each instance of the discovery therein of any foreign substance not produced from the apple, but containing distilled vinegar or dilute acetic acid, boiled cider, and sodium carbonate, was held to be adulterated and misbranded. On January 10, 1917, claimant having admitted the allegations, the product was delivered to him under \$1,000 bond for relabeling as imitation cider vinegar.

5392. Adulteration and misbranding of olive oil.

An article labeled "Olive Oil," but found to contain cottonseed oil, was held to be adulterated and misbranded. On January 18, 1917, no claimant having appeared, the product was destroyed.

5393 and 5394. Adulteration and misbranding of vinegar.

An article labeled "Cider Vinegar" was found to contain distilled vinegar or dilute acetic acid, boiled cider, sodium carbonate and other mineral matter, was held to be adulterated and misbranded. On February 17, 1917, claimant having admitted the allegations, the product was delivered to him under \$1,000 bond in conformity with section 10 of the act.

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BULLETIN UPON REQUEST

DRYING SYSTEMS, Inc.

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Chicago, Ill.

5395. Adulteration of sardines.

Decomposed sardines were held to be adulterated. On January 10, 1917, claimants having consented, the product was delivered to them under \$150 bond in conformity with section 10 of the act.

5396. Adulteration of dressed poultry.

Decomposed poultry was held to be adulterated. On March 1, 1917, claimant having admitted the allegations, the product was destroyed.

5397, 5398, 5399, 5400 and 5401. Adulteration and misbranding of vinegar.

Substantially the same as No. 5394.

5402. Adulteration of oranges.

Frozen oranges were held to be adulterated. On February 14, 1917, the case was tried without a jury. Two days later the product was ordered destroyed.

5403. Adulteration of tomato pulp.

Substantially the same as No. 5312.

5404. Adulteration of sardines.

Substantially the same as No. 5395; the product was destroyed.

5405 and 5406. Adulteration of scallops.

Added water was held to constitute adulteration. On January 4, 1917, no claimant having appeared, the product was destroyed.

5407. Adulteration and misbranding of vinegar.

Substantially the same as No. 5394.

5408. Adulteration of oranges.

Frosted and damaged oranges were held to be adulterated. On February 5, 1917, no claimant having appeared, the product was destroyed.

5409, 5410 and 5411. Adulteration of scallops.

Substantially the same as No. 5406.

5412. Adulteration of canned tomatoes.

Substantially the same as No. 5354.

5413. Adulteration and misbranding of vinegar.

An article labeled "Pure Apple Cider Vinegar," but shown to have been made from dried apples, was held to be adulterated and misbranded. On March 10, 1917, the product was released to claimant under \$300 bond for relabeling.

5414. Adulteration of tomatoes.

Substantially the same as No. 5354; the product was destroyed.

5415. Adulteration of water.

Bottled water, containing filth, was held to be adulterated. On January 29, 1917, no claimant having appeared, the product was destroyed.

5416. Misbranding of "Allouez Natural Mineral Water."

Misbranding was alleged because the analysis of this water indicated the falsity of statements on the label to the effect that the water was a specific for diseases of the stomach, liver and kidneys; diabetes, Bright's disease, and many others. On April 17, 1917, the defendant pled guilty and was fined \$250.

5417. Adulteration and misbranding of apple cider.

An article labeled "Pure Sweet Apple Cider," but shown by analysis to be diluted and partially fermented cider, of which not less than one-third by volume was added water, was held to be adulterated and misbranded. On April 30, 1917, the defendant pled guilty and was fined \$50.

5418. Adulteration and misbranding of oranges.

Oranges labeled "Superior Quality," but shown to be rotten and badly frosted, were held to be adulterated and misbranded. On March 6, 1917, no claimant having appeared, the product was destroyed.

5419. Adulteration of tomatoes.

Substantially the same as No. 5354; the product was delivered to claimant on \$1,000 bond for relabeling.

5420. Adulteration and misbranding of prunes.

An article labeled "Choice California Prunes," but shown to be decomposed and wormy, was held to be adulterated and misbranded. On April 20, 1917, no claimant having appeared, the product was destroyed.

5421. Adulteration of pork and beans.

Decomposed pork and beans was held to be adulterated. On April 5, 1917, no claimant having appeared, the product was destroyed.

5422. Adulteration and misbranding of vinegar.

Substantially the same as No. 5413.

5423. Adulteration of oranges.

Decomposition was held to constitute adulteration. On March 6, 1917, no claimant having appeared, the product was destroyed.

5424. Adulteration of "Diamond Brand Tomato Pulp."

Small pieces of mold, identified microscopically, indi-

cated that the pulp was made from moldy tomatoes, and hence, adulterated. On April 4, 1917, the defendant pled guilty and was fined \$10.

5425. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "Ammonia 8%, nitrogen 6.5%, protein 41% to 45%, fat 8%, and crude fiber (maximum) 9%" was not substantiated by laboratory analysis, which showed ammonia 7.11%, nitrogen 5.84%, protein 36.5%, fat 6.5% and fiber 13.9%. On April 5, 1917, the defendant pled guilty and was fined \$50.

5426. Adulteration of shrimp.

Decomposition was held to constitute adulteration. On February 20, 1917, no claimant having appeared, the product was destroyed.

5427. Adulteration of tomato pulp.

Partial decomposition was held to constitute adulteration. On April 19, 1917, the defendant pled nolo contendere and was fined \$25.

5428. Adulteration and misbranding of cocoa.

The presence of cocoa shells in an article labeled "Cocoa" was held to constitute adulteration and misbranding. On March 19, 1917, the defendant pled guilty and was fined \$25.

5429. Adulteration of oranges.

Substantially the same as No. 5423.

5430 and 5431. Adulteration of scallops.

Substantially the same as No. 5406; the product was ordered sold.

5432. Adulteration of scallops.

Substantially the same as 5406.

5433. Adulteration of shell eggs.

The presence of 113 inedible eggs in a case of 360 eggs was held to constitute adulteration. On April 4, 1917, the defendants pled guilty and were fined \$50.

5434. Misbranding of Temperine.

An article labeled as containing less than $\frac{1}{2}$ of 1% of alcohol, but shown to contain from 0.30 to 4.55 per cent alcohol, was held to be misbranded. On March 27, 1917, no claimant having appeared, the product was destroyed.

5435. Adulteration and misbranding of "Milk Chocolate Lunch Bars."

An article labeled as above but shown by analysis to contain sugar and one or more fats foreign to chocolate was held to be adulterated and misbranded. On March 9, 1917, the defendant pled nolo contendere and was fined \$10.

5436. Adulteration of canned tomatoes.

Substantially the same as No. 5354.

5437. Adulteration of tomato pulp.

Substantially the same as No. 5312.

5438. Adulteration of oranges.

Substantially the same as No. 5423.

5439. Adulteration of shell eggs.

A shipment of eggs averaging 22.53 per cent inedible was held to be adulterated. On April 25, 1917, the defendant pled guilty and was fined \$25 and costs.

5440. Adulteration of eggs.

A shipment of eggs averaging 36.7 per cent inedible was held to be adulterated. On April 4, 1917, the defendant pled guilty and was fined \$50 and costs.

5441. Adulteration and alleged misbranding of beans.

An article labeled "Baked Beans" but shown to have been cooked by another process was held to be misbranded; adulteration was alleged because of decomposition. On March 7, 1917, no claimant having appeared, the product was destroyed.

5442. Adulteration of "Traveler Brand Beans."

Decomposition was held to constitute adulteration. On March 16, 1917, the defendants pled nolo contendere and were fined \$15.

5443. Misbranding of Temperine.

Substantially the same as No. 5434; the alcohol present in samples analyzed ranging from 3.64 to 4.24 per cent.

5445. Adulteration of tomato sauce.

Decomposition was held to constitute adulteration. On March 16, 1917, the defendant pled nolo contendere and was fined \$35.

5446 and 5447. Adulteration and misbranding of beans.

An article labeled "Baked Beans" but shown to have been cooked by another process was held to be misbranded; adulteration was held because of decomposition. In one case the product was destroyed; in the other, delivered to the claimant under proper bond for other than human consumption.

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The American Food Journal

15 South Market Street, Chicago

5448. Misbranding of ginger ale.

Shortage averaging 11.1 per cent was held to constitute misbranding. On May 16, 1917, the defendant pled guilty and was fined \$40.

5449. Adulteration and misbranding of tincture of iodine.

An article labeled as above but shown by analysis to contain but 6.13 grams of iodine per 100 cc., whereas the Pharmacopoeia calls for 6.5 grams, which contained alcohol not indicated on the label, was held to be adulterated and misbranded. On April 2, 1917, the defendant pled guilty and was fined \$12.50 and costs.

5450. Misbranding of "Owl Brand High-Grade Cotton Seed Meal."

Misbranding was alleged because the guaranteed analysis of protein 41%, fiber (maximum) 10%, was not substantiated by laboratory analysis which showed protein 37.7%, fiber 12.7%. On April 4, 1917, the defendant pled guilty and was fined \$50 and costs.

5451. Adulteration and misbranding of "Sciroppo Tamarindo."

Imitation tamarind sirup, consisting largely of sugar sirup and citric acid, and colored with caramel, labeled as above, was held to be adulterated and misbranded, the absence of tartaric acid, the deficiency of phosphoric acid (1.64 mg. per 100 grams) and the presence of caramel, as shown by analysis, being submitted by the government to indicate that the product was not true tamarind sirup. On April 23, 1917, the defendants pled guilty and were fined \$50.

5452. Adulteration of oranges.

Frozen oranges were held to be adulterated. On April 11, 1917, no claimant having appeared, the product was destroyed.

5453. Misbranding of "Royal Baby's Safety."

A solution containing among other substances approximately $\frac{1}{8}$ grain morphine sulphate per fluid ounce, alcohol, sugar, Rochelle salts, emodin, volatile oil and vegetable extractives; santolin indicated, labeled as above, was held to be misbranded because of the presence of morphine, which cannot be administered to babies with safety, and also because of false statements on the label claiming that the solution was a remedy for practically all of the troubles of infancy. On April 12, 1917, the defendant pled nolo contendere and was fined \$50 and costs.

5454. Adulteration of tomato pulp.

Substantially the same as No. 5312.

5455. Adulteration of baked beans.

Decomposed baked beans were held to be adulterated. On April 2, 1917, no claimant having appeared, the product was ordered sold by United States marshal, with the understanding that it should not be used for human consumption.

5456. Misbranding of cottonseed meal and cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of protein 41% to 45%, fat 8%, fiber (maximum) 9% was not substantiated by laboratory analyses, which showed in several samples, protein 36.1%, 33.3%, 36.8%, 35.4%, 33.8%, 33.1% and 32.8%; fat, 6.0%; fiber, 11.6%, 14.5%, 11.6%, 12.2%, 14.4%, 14.6% and 13.9%. On March 9, 1917, the defendant pled guilty and was fined \$275 and costs.

5457. Adulteration of oranges.

Substantially the same as No. 5452.

5458. Misbranding of macaroni.

Domestic macaroni sold under a label in Italian so worded and illustrated as to indicate foreign origin was held to be misbranded. On April 4, 1917, the defendant pled guilty and was fined \$25.

5459. Adulteration of oranges.

Substantially the same as No. 5452.

5460. Adulteration of oysters.

Added water was held to constitute adulteration. On May 1, 1917, the defendant pled guilty and was fined \$10.

5461. Adulteration of tomato pulp.

Substantially the same as No. 5312.

5462. Adulteration of oranges.

Substantially the same as No. 5452; the product released to claimants under \$500 bond, in conformity with section 10 of the act.

5463. Adulteration of oranges.

Fifty-two cases of oranges, among which were many that were decomposed, were held to be adulterated. On March 12, 1917, no claimant having appeared, the product was ordered sorted under proper supervision, that part

fit for human consumption to be sold by the marshal.

5464. Adulteration and misbranding of "Lucca Cream Salad Olive Oil."

Olive oil, labeled as above but shown by analysis to possess a considerable degree of decomposition of the olive oil glycerides, denoting a very inferior grade of olive oil, was held to be adulterated and misbranded. On May 2, 1917, the defendant pled guilty and was fined \$20.

5465. Adulteration of olives.

Worn and moldy olives were held to be adulterated. On May 31, 1917, the defendant pled guilty and was fined \$25.

5466. Adulteration of oranges.

Substantially the same as No. 5463.

5467. Adulteration of scallops.

Substantially the same as No. 5406.

5468. Adulteration of oysters.

Added water was held to constitute adulteration. On April 5, 1917, the case went by default, defendant's collateral of \$20 being forfeited.

5469. Adulteration of grapefruit and oranges.

Decomposition was held to constitute adulteration. On March 14, 1917, it was ordered that the product should be officially sorted, the unfit portion destroyed, and the fit released to claimants upon payment of costs.

5470. Adulteration of oranges.

Substantially the same as No. 5423.

5471 and 5472. Adulteration of tomato pulp.

Substantially the same as No. 5312.

5473. Adulteration of oranges and grapefruit.

Substantially the same as No. 5469.

5474. Adulteration and misbranding of hydrogen peroxid.

An article labeled as above, but shown by analysis to contain smaller quantities of hydrogen peroxid than is called for by the United States Pharmacopoeia, was held to be adulterated and misbranded; one sample was also short weight. On June 7, 1917, the defendant pled nolo contendere and was fined \$10 and costs.

5475. Adulteration of oranges.

A shipment of oranges in which 66.6% showed drying in over 20% of the sections and 16.6% decomposed, were held to be adulterated. On March 19, 1917, claimant having consented, the article was released to him under \$1,000 bond, for sorting under proper supervision, the unfit portion to be destroyed.

5476. Adulteration of oranges.

Substantially the same as No. 5423.

5477, 5478, 5479, 5480, 5481, 5482 and 5483. Adulteration of scallops.

Substantially the same as No. 5406.

5484. Adulteration and misbranding of olive oil.

A salad oil, labeled "Finest Quality Olive Oil Extra Pure of Termini Imeresi Italy Sicilia—Italia Guaranteed Absolutely Pure," but found to contain a substantial amount of cottonseed oil, was held to be adulterated and misbranded. On April 4, 1917, no claimant having appeared, the product was destroyed.

5485. Adulteration and misbranding of olive oil.

A salad oil labeled "Finest Quality Olive Oil—Guaranteed Absolutely Pure," but shown to contain approximately 5% of cottonseed oil, was held to be adulterated and misbranded. On April 4, 1917, no claimant having appeared, the product was destroyed.

5486. Adulteration of tomatoes.

Added water was held to constitute adulteration. On May 18, 1917, claimant having consented, the product was delivered to him under a \$1,500 bond, in conformity with section 10 of the act.

5487. Adulteration of grapefruit.

Decomposed grapefruit were held to be adulterated; the decree similar to that in No. 5469.

5488. Adulteration of scallops.

Substantially the same as No. 5467.

5489. Adulteration of grapefruit.

Decomposition was held to constitute adulteration. On March 19, 1917, claimant having consented, the product was destroyed.

5490. Adulteration and misbranding of pork and beans.

Pork and soya beans, labeled simply pork and beans, were held to constitute adulteration and misbranding.

5491, 5492, 5493 and 5494. Adulteration of oranges.

Substantially the same as No. 5423; product ordered to be sorted and released to claimant.

THE AMERICAN FOOD JOURNAL



—with which was combined on May 15, 1918—

THE FOOD LAW BULLETIN

With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

ROBERT GORDON GOULD, *Editor*

Vol. XIII.

AUGUST, 1918.

No. 8

Meat Packers Attacked by Federal Trade Commission.

On the third of July the Federal Trade Commission, being Messrs. William B. Colver, John Franklin Fort and Victor Murdock, transmitted to the President their report on the meat packing industry. The President held the report until August 8 and then gave it publicity. It is a most sensational document.

In brief, the Federal Trade Commission charges the five big packers—Swift, Armour, Morris, Cudahy and Wilson—with manipulating live-stock markets; restricting interstate and international supplies of foods; controlling the prices of dressed meats and other foods; defrauding both the producers and consumers of food; crushing effective competition; securing special privileges from railroads, stockyard companies and municipalities; and profiteering. The summary of the report is a pamphlet of some fifty pages, far too voluminous for adequate discussion in these columns. As Mr. E. A. Cudahy pointed out at the time of its publication, the general public should read this report, as a careful reading will reveal few facts to justify the many sensational charges.

The nature of the report and the language in which it is couched is such as to cause speculation as to the actual reason for the existence of the Federal Trade Commission. This nation is at war with a dangerous enemy. The packers are called upon by the War Department and the Food Administration acting for our comrades in arms to make enormous shipments of food products upon short notice. Their capital and borrowing capacity have been taxed to the limit. When it is borne in mind that immediately upon the publication of this report many of their publicly listed securities on the New York market dropped sharply,

thereby crippling them to a corresponding extent in their efforts to finance orders given them by the same government responsible for the Federal Trade Commission, one cannot but wonder what really useful purpose the Federal Trade Commission performs.

The packers have grown great; there is no denying that fact. Magnitude carries with it obligations which this JOURNAL is inclined to believe the packers have observed much more scrupulously than seems to be the opinion of the Federal Trade Commission. Magnitude also permits of the accomplishment of great results.

At the time the cry of our allies was for food, shipments of meats were leaving our eastern seaboard at the rate of 15,000 pounds a minute during a ten-hour day. One government order called on the Chicago packers to begin shipping to the seaboard at the rate of 200 cars a day. Such an order had never been dreamed of before. But the packers delivered the goods and kept it up till the government wired to stop the order. The British government one day not long ago ordered 250,000,000 pounds of meat to be delivered in three weeks. The final shipments were made within the time limit. By-products are one of the big economies of big organizations, and explain why the packers can sell meat at a profit of a quarter of a cent a pound. One of the by-products is glue. To use up their glue the Armours run a sandpaper works. To it came an order from the government, one day, for an enormous amount of its product, "at the earliest possible moment." The factory buckled down to the task, ran off 18 miles of sandpaper a yard wide, dried it, cut it up, and shipped it before the following morning.

The packers will no doubt very soon file a rejoinder

to this report. It will be interesting reading and we advise our readers of this JOURNAL to retain an open mind pending its publication.

Wheat Flour Bread Again Permissible.

Housewives throughout the country who patriotically put their homes on a wheatless basis last spring have been released from their pledges to the Food Administration to go absolutely without wheat. As no change has been made in the "fifty-fifty" rule, housewives will continue to purchase an equal weight of wheat substitute with their wheat flour. Bakers are still obliged to make Victory bread, which must contain at least 25 per cent wheat substitute.

This release of housewives follows close upon like action in case of hotels, restaurants, club and dining car services. Federal Food Administrators have been notified to advise their deputies of the change.

The coming in of the new wheat crop has made it possible for the nation to go back partially to its old habits of eating. But the uncertainties of war and the necessity for building up a food reserve are incentives to caution, even in the face of a good crop.

The response of the American housewife last spring, when the country's wheat reserves were exhausted and only wheat saved by abstinence could be sent abroad in response to the life-and-death appeals of the Allies, is regarded by the Food Administration as one of the finest manifestations of patriotic spirit since America entered the war. Hundreds of thousands of homes went partly or wholly on a wheatless basis.

The Sugar Situation.

Basing its action on a careful survey of the world sugar situation and a compilation of the immediate demands, the United States Food Administration calls on the American public to restrict the consumption of sugar in the home to two pounds per person per month from August 1 to January 1. This replaces the former regulation of three pounds per person per month and includes all cane and beet sugar used on the table and in cooking, such as granulated, cube, powdered and all refined grades, as well as raw, brown and refiners' soft sugars.

A similar order is being issued to govern public eating places, limiting their use of sugar to two pounds for every 90 meals served.

The Food Administration is confident that the American public will heartily agree to reduce the household use of sugar here to a level more nearly equal to the present restrictions among the peoples of the Allies, provided our people clearly comprehend that sugar, which with us is often used in great measure as a luxury, has become an essential element for the success of the war among the nations of Europe. Upon our action here depends the possibility of maintaining the ration to our own fighting men and those of the Allies as well as of avoiding a still further reduction of the allotments to the civil populations of the nations fighting Germany, which are already down to a point far under their normal needs. England, which before the war used more sugar than the United States, has already reduced its household consumption to two pounds. France allows its people a maximum of a pound and a half, and the Italian ration has been reduced to barely a pound. Recently even those amounts have not been possible.

Furthermore, unless there is strict and consistent economy in the United States, the supplies for Bel-

gium and those required by the Red Cross, the Y. M. C. A., Knights of Columbus, Salvation Army and similar organizations working for the welfare and comfort of our soldiers in Europe cannot be maintained.

The situation which the United States faces in its efforts to maintain a fair distribution of sugar to the Allied world is as follows: The sugar supplies throughout the country—in homes, stores, factories and bakeries—are at low ebb; the production from the American beet and Louisiana cane crops have been disappointing; the yield in Porto Rico has likewise been smaller than anticipated, and the inability of the United States and the Allies to secure sugar from Java and other distant sources on account of the imperative call for ships for the movement of troops and their supplies has materially reduced the supply from such quarters. Added to this already difficult situation, the quantity needed by the Army and Navy greatly exceeds earlier estimates, we must send a large amount to France and Italy to take the place of the great volume lost through the German and Austrian invasions, during which much beet land was overrun and many factories destroyed; we have to supply certain quantities to neutral nations under agreements, and finally over 50,000,000 pounds were lost recently through submarine sinkings off our Atlantic coast.

The industries using sugar have been reduced in their consumption of sugar, most of them having their supplies cut in half, and some receiving none at all. The situation is so serious that every possible means of conservation should be observed. Household canning without sugar should be done wherever possible, and where sugar is used it should be only to the extent necessary to secure the maximum of preserving with the minimum use of sugar at this time. With prospects of increased supplies after November 1 and still more after January 1, sugar may be then added with more freedom.

In order to make sure that the distribution of sugar in the United States shall be equitable, the Food Administration has worked out a scheme of allocation to the states, based on population and taking into account the needs of sugar using industries in the states. Within each state the details of distribution will be left to the Federal Food Administrators.

SUGAR IN CANADA.

Reports that the Canadian government is placing no restrictions on the use of sugar and that citizens of this country, merely by crossing the border, may purchase in large amounts, are emphatically denied by the United States Food Administration.

The Canada Food Board recently issued a statement calling for a reduction of Canadian sugar consumption to one and one-half pounds per person per month—half a pound below the "honor ration" requested in this country by the United States Food Administration. All regulations governing the use or holding of sugar will be rigidly enforced, the Canada Food Board has declared. It is taking strict measures to prevent hoarding, in most cases imposing a jail sentence as well as a heavy fine. Manufacturers are strictly curtailed in their use of sugar and householders are prohibited from purchasing in quantities which would warrant consumption of more than the requested allowance.

Citizens of this country would be running a serious risk if they attempted to purchase sugar in Canada. Although restrictions there are placed upon the pur-

chaser rather than upon the retail dealer, severe penalties are provided for attempted exportation to the United States without an individual export license from the Canadian War Trade Board, which will grant export licenses only in cases which meet with the approval of this government. Supplementary action along this line has been taken by the United States War Trade Board, which has prohibited importation without an individual import license. Persons attempting to bring sugar from Canada to this country would be faced with the possibility of heavy fines and jail sentences should they be apprehended by the customs authorities of either country.

In addition to restrictions upon the manufacturers and limitations upon household use, the Canadian food authorities have ruled that no person shall use more than 25 pounds of sugar to 100 pounds of prepared fruit in the manufacture of canned fruits for sale. This, of course, does not apply to jams, jellies or marmalade.

Health Survey Shows Need for More Milk.

As a result of a health survey made in five counties of Wyoming, home demonstration agents in that state are urging farm women to see that their children drink more milk, and to use more milk products in the diet. The survey was made by the state leader of home demonstration agents of the United States Department of Agriculture and the State agricultural college working with the rural teachers in the counties. It showed that 48 per cent of the absence of children from school was caused by illness, a large part of which could be attributed to improper food. Besides the campaign for the use of more milk, special food instruction will be given by the agents to meet the needs of the families in which the children are not being given proper diets.

The Beef Supply.

On August 9th, the U. S. Food Administration notified the public that the extreme drouth in Texas, Oklahoma and other sections of the Southwest, which also affects Montana and certain areas in adjacent states in the Northwest, is endangering the meat herds in these great cattle producing sections. As an immediate result, the present cattle runs are 50 per cent heavier than in the corresponding period of last year. The larger part of this stock is below the most desirable market weights and would normally remain on the ranges until it had attained a larger growth. So far as is practicable these cattle are being moved to sections where conditions of grass, grain and water are more favorable. The surplus must, however, be handled.

The Food Administration therefore is for the present releasing the meat restrictions. This is about one month earlier than was originally contemplated. It is desired, however, to continue the same careful regard for economy in beef and in all essential foods as a measure to safeguard the future.

There is always a liberal run of the lighter cattle at this season of the year, but the present supply is excessive. Practically all of the heavier and fatter cattle are more needed for export purposes for our own armed forces and those of our Allies because on account of their thickness and fatty covering they are less subject to deterioration during transfer from cars to ships and freezers, when they are not protected by refrigeration.

In rescinding regulations which prohibited public eating places from serving beef more than once a day and in releasing the householders from their voluntary agreement to curtail purchases to one and one-half pounds per week, including bone, the Food Administration requests that this freer use of beef be restricted so far as practicable to the cattle which dress under 475 pounds. To achieve this, the retail meat markets are asked to specialize in the use of these lighter cattle and families and patrons of all public eating places are requested to patriotically accept beef of this weight, even though they have heretofore been accustomed to using the heavier beef only.

The desire of the Food Administration at present is not primarily to increase the consumption of beef as a whole, but to induce a preference in favor of the lighter weight cattle, of which we have an abnormal surplus. This will bring about a conservation of the heavier cattle needed for our soldiers and for export to our Allies. At the same time it will afford a measure of protection through increased outlet for cattle raisers in the drouth afflicted areas.

Crop Conditions in France.

Almost everywhere in France the fodder crops are in good condition, although occasionally they are said to be of lighter weight, owing to the lack of fertilizing materials. Potatoes have suffered frequently on account of the rain-soaked soil. The grapevines also have suffered in some districts. The worst showing is made in fruit growing. Practically everywhere, even in the south, the fruit harvest will be below normal. Vegetables will be plentiful, however. Finally, the cereal crops, except, perhaps, oats here and there, are making an encouraging showing.

Beef and Pork Exports for June.

Exports of beef from the United States during the month of June totaled 92,173,000 pounds, of which 95 per cent went to the United Kingdom, France, England and Belgium. The monthly average of beef exports for the three years preceding the war was 1,066,000 pounds.

Pork exports for June total 169,331,000 pounds, of which 83.5 per cent went to the flour Allies. The average monthly exportations of pork for the three years preceding the war were 41,531,567 pounds. The amount of pork products received in England has enabled that country to lift the restrictions on the consumption of bacon.

Molasses and Sirups Standards May Be Changed.

The Joint Committee on Definitions and Standards is considering the advisability of revising the definitions and standards for molasses and sirups.

The advisability of limiting the terms "sirup" and "molasses" is especially being considered. Some doubt exists as to the propriety of using the trade term "refiners' sirup" when the article has been known under that name in the trade but has not been sold under that name to any large extent to the public. The committee also desires to receive statements on the practicability of differentiating between feed molasses, food molasses and other molasses.

The Joint Committee on Definitions and Standards is composed of chemists representing the United States Department of Agriculture, the Association of Official Agricultural Chemists and the Association of American Dairy, Food and Drug Officials.

PROGRAM

(Revised)

Twenty-second Annual Convention ASSOCIATION OF AMERICAN DAIRY, FOOD AND DRUG OFFICIALS

Chicago, Illinois

August 27, 28, 29, 30, 1918

Headquarters
CONGRESS HOTEL

Convention Hall
THE FLORENTINE ROOM

OFFICERS

JAMES FOUST, President.....	Pennsylvania	E. L. BARNHOUSE, Third Vice-President...	Missouri
A. M. G. SOULE, First Vice-President.....	Maine	GEORGE J. WEIGLE, Treasurer.....	Wisconsin
J. M. MOORE, Second Vice-President.....	Alabama	JOHN B. NEWMAN, Secretary.....	Illinois

EXECUTIVE COMMITTEE

Dr. E. F. Ladd.....North Dakota
Guy G. Frary.....South Dakota
George L. Flanders.....New York
Ex-Officio
The President and Secretary

COMMITTEE TO REVISE CONSTITUTION

George L. Flanders.....New York
Carl L. Alsberg.....Washington, D. C.
William B. Barney.....Iowa
Frank A. Jackson.....Rhode Island
E. F. Ladd.....North Dakota

COMMITTEE ON CO-OPERATION

Benj. L. Purcell.....Virginia
J. S. Abbott.....Washington, D. C.
Fred L. Woodworth.....Michigan
Maurice Groshon.....Wyoming
R. E. Rose.....Florida

TUESDAY, AUGUST 27, 9 A. M.

OPEN MEETING.

- (1) Invocation.
- (2) Address of Welcome, H. H. Merrick, vice-president Chicago Association of Commerce.
- (3) Response to Address of Welcome, Benjamin L. Purcell, Dairy and Food Commissioner, Virginia.
- (4) President's Address, James Foust, Dairy and Food Commissioner, Pennsylvania.
- (5) "Canadian Food and Drug Control—Adulteration and Misbranding," Dr. A. McGill, Laboratory Inland Revenue Department, Ottawa, Canada.
- (6) "French Food and Drug Control—Adulteration and Misbranding," Lieutenant Savage, French High Commission, Washington, D. C.
- (7) "Food Control in Switzerland," Fred'k. Luthi, Chancellor, Swiss Legation, Washington, D. C.
- (8) "Municipal Food and Drug Control in the United States," Dr. W. A. Evans, Professor of Sanitary Science, Northwestern University Medical School, Chicago.

- (9) Appointment of committees.

- (10) Report of the Secretary, John B. Newman, Superintendent of Division of Foods and Dairies, Illinois.

- (11) Report of the Treasurer, George J. Weigle, Dairy and Food Commissioner, Wisconsin.

- (12) Posting of Amendments to the Constitution and By-laws.

- (13) Report of Credential Committee.

Adjournment.

WEDNESDAY, AUGUST 28, 9 A. M.

EXECUTIVE SESSION.

- (1) "Drug Standards," Dr. Edward Kremers, University of Wisconsin.

Discussion: Dr. W. A. Puckner, American Medical Association, Chicago.

- (2) Report of Committee on Co-operation, Benjamin L. Purcell, Dairy and Food Commissioner, Virginia.

Discussion: J. S. Abbott, Bureau of Chemistry, Washington, D. C.; W. C. Dumas, State Chemist,

Georgia; E. J. Lea, Director, Bureau of Foods and Drugs, California.

(3) Report of Committee Appointed to Call Upon Federal Food Administrator Hoover to Arrange for Co-operation, Benjamin L. Purcell, Chairman.

(4) Committee on Milk Regulations. John B. Newman, Division of Foods and Dairies, Illinois, Chairman.

Discussion: B. H. Rawl, U. S. Department of Agriculture, Washington, D. C.; John W. Duke, Commissioner of Health, Guthrie, Oklahoma.

(5) Committee on Definitions and Standards. Dr. E. F. Ladd, Chairman, Food and Drug Commissioner, North Dakota, Chairman.

(6) Committee on Amendments to the Constitution and By-laws, C. L. Alsberg, Chief of Bureau of Chemistry, Washington, D. C.

Discussion: George J. Weigle, Dairy and Food Commissioner, Wisconsin; F. L. Woodworth, Dairy and Food Commissioner, Michigan.

(7) "Distinctive Names, Artificial Products, Imitation Products, Synthetic Products, Substitutes," Charles F. McKinley, Assistant Attorney General, Division of Foods and Dairies, Illinois.

Discussion: William Frear, Assistant Attorney General, Collaborating Chemist, Pennsylvania; Harry L. Eskew, Food and Drug Commissioner, Tennessee; A. M. G. Soule, Chief, Food and Drug Department, Maine.

Adjournment.

THURSDAY, AUGUST 29, 9 A. M.

OPEN MEETING.

(1) "Food Supplies at Cantonments," Major J. P. Street, former State Analyst of Connecticut now in military service.

Discussion: Thomas C. Gault, Chief, Dairy and Food Division, Ohio; W. F. Hand, State Chemist, Mississippi.

(2) "The War's Effect on the Dairy Industry," Dean Eugene Davenport, University of Illinois.

Discussion: Prof. Oscar Erf, Ohio State University; E. F. Benson, Commissioner of Agriculture, State of Washington.

(3) "Food Regulations in War Time as Compared to Times of Peace," George L. Flanders, Counsel, Department of Farms and Markets, New York.

Discussion: Howard Heinz, U. S. Food Administrator, Pennsylvania.

(4) "Sanitary Control of Food Producing and Distributing Establishments," Guy G. Frary, Food and Drug Commissioner, South Dakota.

Discussion: E. L. Barnhouse, Food and Drug Commissioner, Missouri; J. R. Garner, Chief Inspector, Central Division, Bureau Chemistry, Chicago; L. M. Tolman, Chicago.

(5) "The City Health Officer's Function in Food Control," Dr. J. W. Wright, Director of Public Health, Erie, Pa.

Discussion: F. C. Blanck, Food and Drug Commissioner, Maryland; Dr. H. E. Barnard, Food and Drug Commissioner, Indiana; R. B. Fitz Randolph, Assistant Director, Department of Health, New Jersey.

(6) Unfinished Report of Canned Goods Committee, Carl L. Alsberg, Chief, Bureau of Chemistry, Washington, D. C.

Discussion: L. M. Tolman, Chicago; Dr. W. D. Bigelow, Chief Chemist, National Cannery Ass'n, Washington.

Adjournment.

THURSDAY, AUGUST 29, 7 P. M.

OPEN MEETING.

Association Dinner, Wilbur D. Nesbit, Toastmaster.

Talk by W. A. Milne, Chief, Miscellaneous Activities Division, U. S. Food Administration, Washington, D. C.

"Relation of Wholesale Grocers to Food Control Departments," Arjay Davies, President, National Wholesale Grocers' Association.

Remarks by Harry A. Wheeler, U. S. Food Administrator for Illinois.

FRIDAY, AUGUST 30, 9 A. M.

EXECUTIVE MEETING.

(1) "Co-ordination of State and Municipal Food Control with Especial Reference to Meat, Milk and Sanitation," Dr. H. E. Barnard, Dairy and Food Commissioner, Indiana.

Discussion: R. E. Rose, State Chemist, Florida; James Sorenson, Dairy and Food Commissioner, Minnesota.

(2) "The Future Food and Drug Control," W. G. Campbell, Assistant Chief, Bureau of Chemistry, Washington, D. C.

(3) "Factory Inspections," J. R. Garner, Bureau of Chemistry, Chicago.

Discussion: W. G. Tice, Chief, Bureau of Foods and Drugs, New Jersey.

(4) "Review of Court Decisions During the Past Twelve Months," William M. Williams, solicitor, Department of Agriculture, Washington, D. C.

(5) Round table conference at which any commissioner may bring up any topic of interest with a view of finding out what has been done by commissioners of other States, that those concerned may mutually benefit by exchange of ideas.

(6) Report of Resolutions Committees.

(7) Action on All Reports.

(8) Election of Officers.

(9) Presentation of invitations for next convention.

Adjournment.

The Address of Welcome.

The American Dairy, Food and Drug officials are fortunate in being welcomed to Chicago by a man of affairs who is well versed in the food industry. Mr. H. H. Merrick, who will open the convention, has until recently been with Armour & Company.



H. H. Merrick.

Mr. H. H. Merrick is a native of Minneapolis and is a graduate of the law school of the University of Minnesota. He served as house attorney for Tollerton & Stetson for some time in Sioux City, and later he practiced law in Minneapolis. Subsequently he received the appointment of credit manager for T. M. Sinclair Co., a large concern in Cedar Rapids. In 1902 he came to Chicago and for some years served as branch house credit man for Armour and Company.

A few years later he succeeded to the general supervision of credits for this concern and its allied interests. In this capacity he served up to the time of his retirement on July 20th.

Mr. Merrick has always been widely interested in public affairs and has been connected in an official capacity with many organizations of a business and patriotic nature. He is now president of the Chicago division of the National Security League, vice-president of the Chicago Association of Commerce, chairman of the Selective Service Association of Northern Illinois and president of the District Board No. 2 of that organization, director of the War Recreation Board, and he has taken an important part in the operation of the State Council of Defense. Last year he was president of the Chicago Association of Credit Men. He is now vice-president of the Central Trust Company, one of Chicago's large banking institutions.

While in Chicago the Food Control officials, who are in attendance at their twenty-second annual con-

The Busy Secretary.



John B. Newman,

Superintendent of Division of Foods and Dairies of Illinois.

vention, will be given a busy time by Secretary Newman and his various committees, in addition to the very full program arranged for the regular meetings. During the spare hours the delegates will be shown some of the many food manufacturing establishments in Chicago, cold storage warehouses and similar establishments. There will be a special committee to inform delegates as to the food producing activities of Chicago and to accompany them on visits of inspection.

That the ladies may be well entertained there has been a special committee appointed, the personnel of which is as follows:

Mrs. John B. Newman, chairman; Mrs. I. E. Doolittle, Mrs. G. W. Hoover, Mrs. A. V. H. Morey, Mrs. D. J. Bryan, Mrs. Chas. Tressler, Mrs. C. E. M. Newton, Mrs. Chas. Healy, Mrs. J. R. Chittick, Mrs. L. M. Tolman, Miss Helen Miller.

Wednesday afternoon Secretary Newman will take his guests by special train, serving luncheon en route, to the Great Lakes Naval Training Station where they will see 45,000 men in training and during the course of the afternoon see 12,000 middies drill to the inspiring music of Sousa's world-famous band of 800 pieces. At 5:30 in the afternoon the special train will return, stopping at Ravinia Park for dinner and the opera, arriving at Chicago before midnight.

On Thursday those in attendance at the convention will be given an automobile trip through the boulevards, the destination being the Union Stockyards. Here they will be taken in hand by a special com-

The President of the Convention.**James Foust,**

Dairy and Food Commissioner of Pennsylvania.

mittee which will show them the manifold food manufacturing activities in that district. Special attention will be given to establishments such as egg-breaking rooms, packing rooms and others, where the present high standards of sanitation and personal hygiene in force in the stock yards are most in evidence.

The convention dinner on Thursday evening will be a modest affair, conducted on the "pay-as-you-enter" plan. Despite the modest nature of the dinner itself the evening will be replete with entertaining and informative addresses.

The Toastmaster.

The services of Chicago's best known toastmaster and presiding officer at festal occasions have been secured for the convention dinner. For years Wilbur D. Nesbit has been in demand for all the big events of the kind. As president of Chicago's famous "Forty Club," the best known organization of good fellows in the country, Nesbit has introduced most of America's celebrities. In the winter season hardly a week passes without Nesbit appearing either as a speaker or as toastmaster at some big banquet in Chicago or elsewhere. His after dinner speeches are known in all the large cities over the country.

During the Third Liberty Loan campaign Nesbit was director of publicity for the seventh federal reserve district, and the manner in which he handled his work brought high praise. During that campaign Nesbit frequently accompanied the speakers on their tours, and at the big meetings he gave his thrilling tribute to Old Glory—"Your Flag and My Flag."

This poem has perhaps brought more fame to Nesbit than anything else he ever wrote, although for years his short stories appeared in the best magazines of the country, and his dramatic work had long runs on the stage.

For the past nine years Mr. Nesbit has devoted his

**Wilbur D. Nesbit.**

time to the advertising business, becoming a member of the Mahin Advertising Company after having written a feature column for a syndicate of newspapers every day for fourteen years previous to that. Two years ago Mr. Nesbit joined Wm. H. Rankin and H. A. Groth and bought out Mr. Mahin's interest, the name of the company being changed to Wm. H. Rankin Company. Mr. Nesbit is vice-president of the company and has charge of the copy and art work. He has written many of the biggest advertising campaigns, and gives his personal attention to such advertising as that of Wilson & Company, Carnation Milk, Hebe, and so on. He specializes in food product advertising. Mr. Nesbit created the slogan, "The Wilson Label Protects Your Table," for Wilson & Company. A recent magazine article concerning Nesbit said that "in spite of his literary fame and his oratorical ability, Mr. Nesbit has established himself as a sane, solid business man whose judgment is worth while and whose work in advertising is definitely effective at all times."

With Nesbit in the toastmaster's chair the dinner will be one that will be remembered by both the speakers and the audience.

Economies in Tomato Manufacturing*

By J. H. SHRADER

Chemical Technologist, Bureau of Plant Industry, Drug and Poisonous Plant Investigations, Washington, D. C.

WHEN one interests himself in the manufacturing aspect of the great steel industry, he finds the whole procedure made up of a number of more or less isolated processes each complete in itself but contributing its share to the completion of the whole. He sees machinery everywhere and most intimately connected with the whole process of steel manufacture from extracting the iron from the ore to turning out the finished goods. As perfect as the whole operation seems, the intelligent investigator will not be surprised to be told that technologists who are operating the plant can point out most serious deficiencies in many places, and that the whole staff is continually striving for improvements. One expects to find great technical developments in the copper industry. Large engineering and chemical staffs are employed to devote all their time to surmounting difficulties and controlling operations. In these great industries we expect complexity and its attendant problems.

But when one considers such industries as that of canning, he naturally wonders where there might be any difficulties of moment, and where can there be the need for much mechanical application. Surely if the activities of our wives and mothers during the canning season are any criterion, the whole procedure seems simple enough. So seems the iron industry when one seeks to make 5 pounds of iron in a day or two, with a whole forest back of him for charcoal and no time factor to be troubled with. It was the economic pressure of quantity against time that forced the iron masters from counting pounds to counting tons. The same conditions forced food manufacturing likewise from the pound basis to that of tons. But the necessity of this capacity consideration is only the first of a number of problems. If the iron master unexpectedly has an extra lot of ore dumped at his plant, or if his plant shuts down for any reason, the iron ore can be readily stored until such time as the superintendent calls for it. His operating season is the whole year.

The canner, however, figures on a brief season of a few months of intensive effort in which he has to make whatever he can and then close up and wait three quarters of a year until the next season. Consequently, he plans to keep his plant running pretty nearly to capacity while the running is good. Any unexpected glut of raw material together with factory shutdown always accompanying capacity stride means a slip somewhere; either a loss due to inefficient operation or spoilage, or both, for raw food products can not be readily stored but begin to spoil before they are well on their way to the factory. It means get them into cans at once or lose them.

The operation of commercial canning consists of the following steps, and in general applies to about all the fruits and vegetables used: first, preparation of the material for canning, such as sorting out the spoiled,

washing and trimming; second, packing into cans, either by hand or machine; third, adding the necessary juice, likewise by hand or machine; fourth, exhausting, or reducing the pressure within the can; fifth, sealing either by the old method of soldering the top or by the new so-called sanitary method by which the top is pneumatically crimped onto the can; sixth, sterilizing by heat in continuous or non-continuous retorts; and seventh, inspecting the cans for imperfect sealing, then labeling, boxing and shipping.

As applied to tomato canning, the above procedure operates as follows: Tomatoes in the Tri-state district (Maryland, Delaware and New Jersey) are usually shipped either by boat, car or wagon in what is known as the $\frac{5}{8}$ bushel basket, stacked, and piled several high at the destination. About the only advantage such basket handling possesses is that they are easily handled, are light and when stacked afford ventilation through the pile, thus minimizing the inevitable spoilage.

The tomatoes are then dumped into a scalding at the rate of about twenty baskets per minute (more or less, according to size and condition of tomatoes, and rate at which they are used by peelers). This machine washes the fruit and by means of a continuous chain belt, carries it through a jet of live steam, then quickly under a curtain of cold water. The short duration of the steam application localizes the heat mostly to the skin, while the sudden bath in comparatively cold water cracks the skin, thus rendering the latter easy to be removed. The procedure from here differs somewhat but the essential point is that the scalded fruit is then dumped from the scalding belt into shallow pans or other receptacles which travel along a table provided with a moving belt about which are stationed the women who peel. As the latter are in need of tomatoes they slide the basket or pan of tomatoes from the moving belt onto a small shelf in front of them, peel the tomatoes over a trough or pan, and place the peeled fruit into a bucket. Sometimes tomatoes are brought to them and dumped into a stationary receptacle out of which the peeling is done. When the bucket of peeled tomatoes is full, the peeler is paid on the spot and is directed to place her bucket of tomatoes onto the same or another belt, according to the system used. The peeled tomatoes are thus carried to the filling machines. In some factories, the tomatoes are placed on a long table around which stand the girls who pack the tomatoes into the cans by weight. In other cases, the tomatoes are dumped into filling machines set to deliver a so-called constant quantity of the fruit into cans automatically placed to receive it and in the same way carried away when filled.

The cans containing solid, comparatively speaking dry or drained tomatoes are then delivered to belts which convey the cans to machines which fill them with tomato juice even with the top. This juice is collected from the receptacles of tomatoes, for after peeling the fruit loses juice continually all along the line until canned. Then the cans pass into the exhaust box.

The object of exhausting is to heat the contents of the can to a slightly elevated temperature so that when

*It is apparent that Mr. Shrader's article applies primarily to the smaller concerns in the so-called "Baltimore District." All who are acquainted with the tomato products industry know that many of his criticisms do not apply to the well conducted factories in Indiana, California and the tomato-producing districts generally.—Editor's Note.

capped and cooled to atmospheric temperature, the contraction of the contents causes a slight diminution in pressure. This is called exhausting. This heating is effected by live steam jets and may last several minutes, depending upon the condition of the fruit, duration of contact, intensity of heating and quality sought.

From this box the cans are capped. If the old soldering process is used, the cans pass under a machine which washes off the top. A cap is placed over the hole by a girl and is soldered either by hand or by a machine. In the newer or so-called sanitary method, the can passes directly from the exhaust box to the closing machine which sets the top on and crimps it pneumatically to the flange of the can.

Since tomatoes may be sterilized by heating to either 212°F. for say 30 minutes, or 240°F. for 10 minutes, it follows that in the first case an open tank of boiling water is sufficient, while, in the latter event, a closed retort, similar to the autoclave of the bacteriological laboratory, may be used.

After this treatment, called processing, the goods are stacked on the floor long enough to enable all faulty cans to manifest themselves (which they do in a manner never to be forgotten by anyone who ever passes through a factory where they are stored). They are then labeled by hand or machine, boxed and shipped.

All of this sounds as if the packer's whole effort is to start the operation and all goes well. The starting is the easiest of all. To maintain the pace and yet pack with a minimum of waste and lost motion is the great problem. Great as have been the strides in developing the great art of canning, we have not half covered the ground from the standpoint of avoiding waste of material, not to mention the almost criminal waste of heat.

If the pack represents 50% of the weight of the original raw stock, the packer congratulates himself on the successful yield. Sometimes it yields 65%. Often it is down in the thirties. This means that if we take 50% yield as our basis, in Maryland we lose 71,000,000 cans or over \$2,000,000 at \$15 per ton of raw tomatoes, and in the United States 785,000,000 cans, or nearly \$5,500,000.

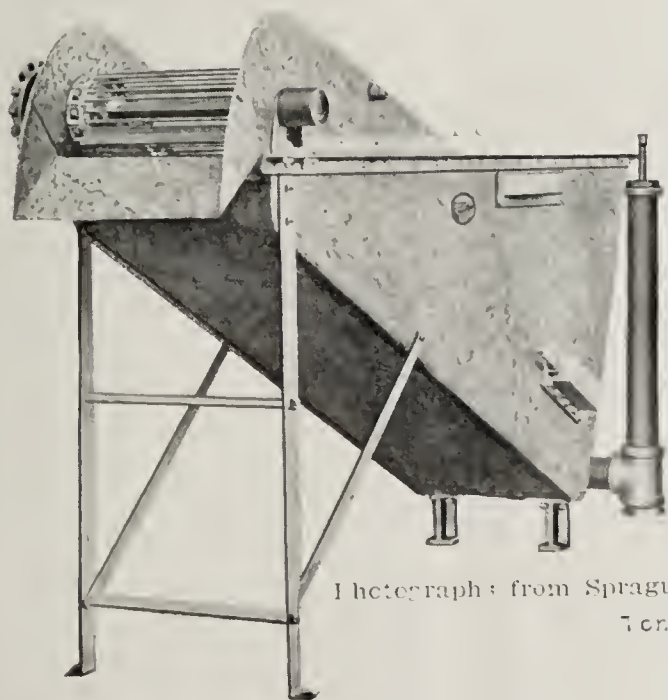
The first place where good engineering practice is necessary, and where little exists today, is to devise an efficient sorting table. This is the tomato conveyor belt along the sides of which stand the women who

pick out the unsound material. The object sought is to devise a procedure whereby the unsound fruit can be detected without the necessity of picking up each individual tomato to inspect the condition of the underside, and at the same time the avoiding of too rough treatment to the delicate fruit serving to crack it and thus lose juice. Since much of the fruit is very ripe and all of it very juicy, any rough treatment will crack it, resulting in loss of juice and deterioration of quality. Efficient sorting consists in inspection of the whole tomato with ready means of removal and disposal of the unsound. Machines which rotate the tomato tend to crush the soft goods; spraying machines with strong sprays designed to dig out the decayed portions of the fruit, operate to destroy sound but at the same time very ripe stock; while plane belts equipped with ridges over which the tomatoes will tumble, either do not work in a jam, or contribute to shrinkage by cracking soft fruit.

The greatest actual loss occurs in the operation of peeling. Now give a woman time and she can doubtless peel a tomato with but little loss over that naturally expected due to core and juice. But if she is doing piece work and is paid by the basket, is not charged with the raw material and does not pay for the waste, then she ruthlessly cuts away much of the tomato in her haste and the packer pays double.

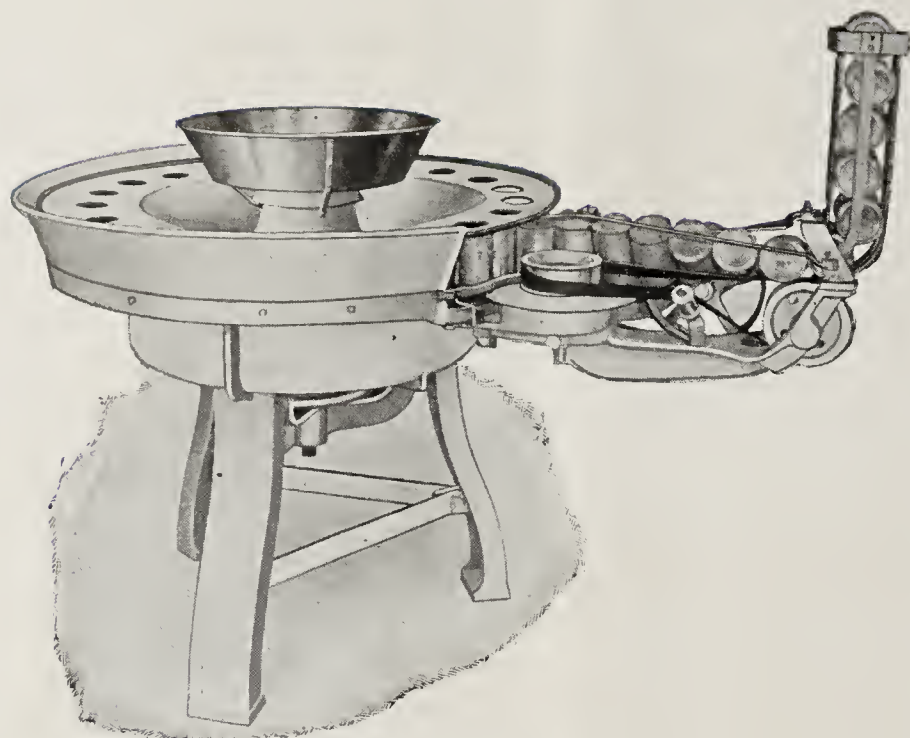
A fifty per cent yield is fair; sixty-five extraordinary. The rest is absolute waste. The solid part is hauled away at a net loss; the juice, containing as much food and condiment value as the so-called solid portions, flows into the sewer. And we cry, "Increase the tomato acreage."

Another source of loss is the tomato filling machine. Imagine the effect on a tomato when it is forced up into a cylinder closed at one end by a piston and discharged through the small top into the can by the descending piston. To say the least the tomato is badly torn, and the valuable juice flows away. Other types of fillers exist but each has its serious objections, most all of which not only tear the fruit more or less, but give unequal fills of the so-called solid matter by their inability to prevent the liquid portions from settling to the bottom of the hopper and leaving the upper ones dry. This is largely why the housewife complains that often she opens a can and finds it mostly juice with here and there a lonely piece of tomato. Of course, hand filling obviates such factors contributing to loss of



Photographs from Sprague Canning Machinery Co.

Tomato Washer (to the left). Inspecting Table (to the right).



Photograph from Sprague Canning Machinery Co.
Sprague-Lowe Hand Pack Tomato Filler.

quality as well as the very material one of loss of juice, but up goes the cost of packing.

The cans varying from half full to overflowing of drained solids go to the juice filler. This is kept full of hot tomato juice and fills the can with juice even with the top. As explained above, this juice is from the drained fruit after peeling. It contains just as much food and condimental value as the more solid portion of the tomato and hence should be incorporated into the pack as an integral part of it. No machine has been invented which will fill a can to within a given distance from the top. If the tomato filler is working satisfactorily, about 5 to 10% of juice is necessary to give the can a correct fill. If the filler gets out of adjustment due to a sudden change in the quality of the stock, or if the hopper is delivering too large a quantity of tomato juice from the tomatoes crushed by the weight of those above, then the can comes through half full of tomatoes. But the unthinking juice machine fills up the can with juice and we have another case of a watery looking pack. The top cannot be soldered on or crimped on to an absolutely full can. Provision is made by a dumper or other spilling device whereby this excess of juice is removed, leaving the level of the contents of the can approximately constant. Loss here may amount to as much as fifteen per cent of the contents of the can.

The legitimate skin, core and seed waste amounts to about five per cent of the original tomato. The yield of goods in cans is fifty per cent, leaving a net loss of about forty-five per cent. Almost all of this can be recovered and amount to more than twice what the Government has commandeered

to feed an army.

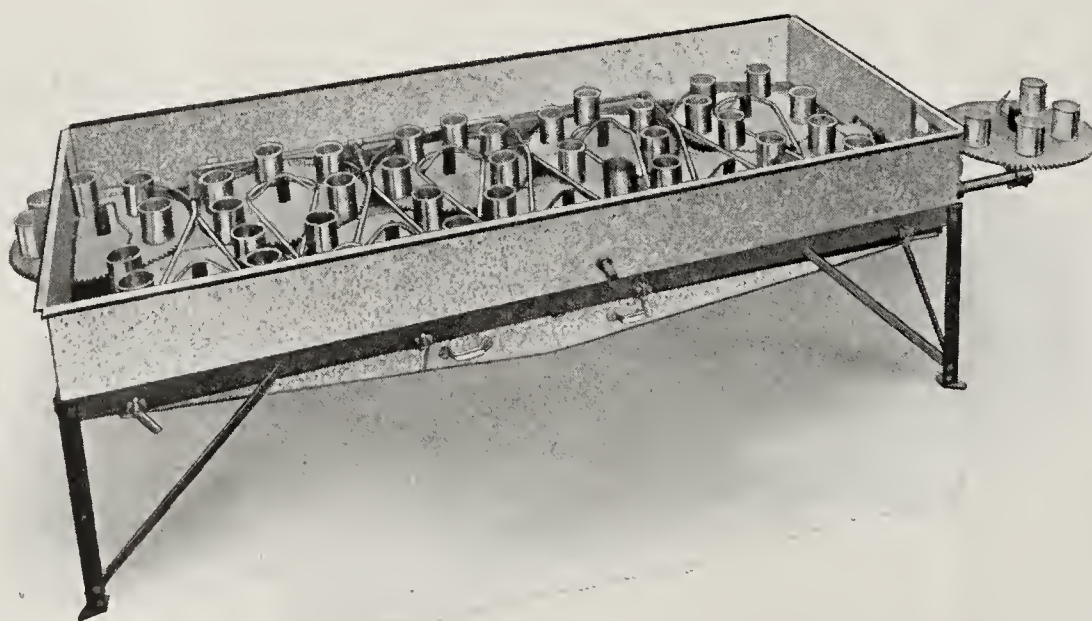
Wastes are not the only phases of tomato packing commanding the attention of engineers. Several other lines of tomato manufacture have been opened up involving engineering questions which are of moment not only to this industry but to several others. This is the manufacture of the more or less concentrated products of pulped tomatoes used in soup and ketchup. Tomatoes are pulped in commercial practice by more or less disintegrating them either by crushing or a slight cooking, and passing them continuously into what is known as a cyclone machine (described later on) which separates the skin, seed and core from the juice and flesh of the tomato. A mixture of flesh and juice passes through together while seed, skin and cores are discarded as waste. This mixture of juice and disintegrated flesh is called cyclone juice and differs only from what is known as tomato pulp in the fact that it is not concentrated. This concentration of cyclone juice to the various pulps, sauces, and pastes is an engineering problem pure and simple, and its successful operation can only be attained by applying engineering methods.

Concentration of tomato cyclone juice is effected by boiling out the water. It is this boiling that presents such problems to the industry. When one considers that the market value of the product depends on its thickness and color, he can realize that the factors determining quality militate against each other. Thus, to overcome this darkening by heat is the great problem. Since this is doubtless due to a chemical reaction, it possesses the factors of temperature and time. In other words, if we cook the juice quick enough or at a low enough temperature, good results may be effected. Vacuum evaporation secures the latter and gives a splendid product.

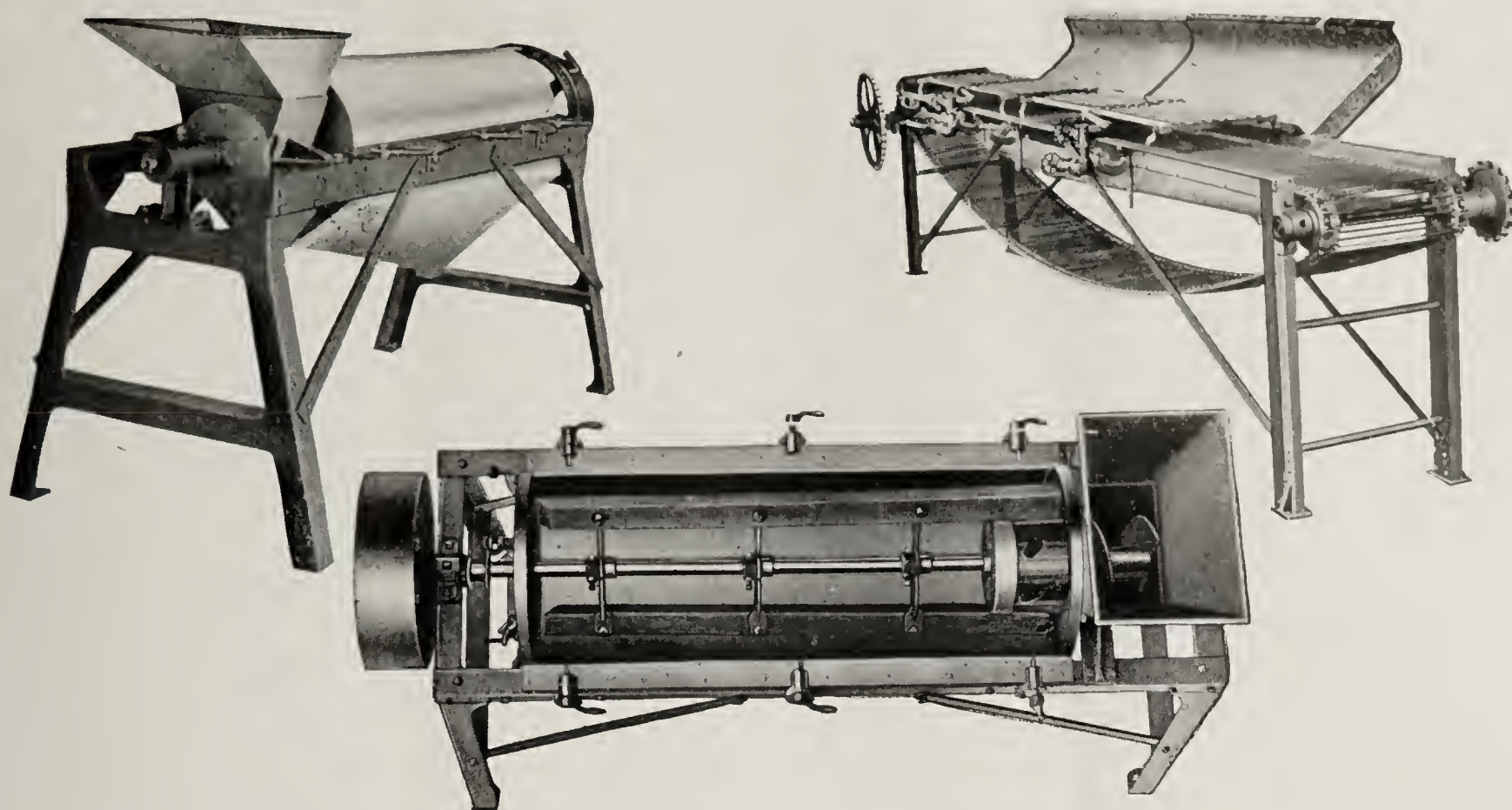
But this operation applied to tomato products does not present the simplicity of evaporation in vacuo of homogeneous liquors such as sugar syrups. Excessive foaming, caking in the beating surfaces of the pulpy fibrous mass, introducing the flavoring ingredients and handling the more or less pasty finished mass, all present problems which only recently have been satisfactorily handled by engineers.

Many tomato pulping plants are not able to install the expensive equipment for vacuum evaporation, or maintain the skilled service necessary for its control. To meet this demand, engineers have endeavored to

effect evaporation by several methods, all seeking to expose the rich and fibrous material to the action of air and temperature for as short a period as possible. Continuous evaporation, forced draft applied to ordinary steam jacket kettles whereby dry air is continually removing the saturated air over the boiling mass, evaporating machines in-



Photograph from Sprague Canning Machinery Co.
Hawkin's Disc Exhaust.



Photographs from Sprague Canning Machinery Co.

These three illustrations are of pulping machines.

incorporating a rapid stirring of a small amount of juice exposed to a large heating service for a brief interval, mechanical separation of fibre from the clear, colorless juice with high concentration of the latter, and then addition and mixing of the uncooked fibre to it, and boiling in wooden tanks with closed steam coils to insure absence of metallic contamination together with rapid boil, all are now being tried out.

Continuous evaporators seek to minimize labor but require control to secure a product of uniform consistency. I know of none on the market simple in construction and which operate more efficient than an ordinary steam jacket kettle.

Another large problem necessary to be solved is a method for storing and holding cheaply large quantities of tomatoes. As stated previously, the packer buys pretty closely up to his capacity, but the more or less uncertainty accompanying transportation often results in a glut. This means either a driving of the factory to use up the goods or great loss from spoilage, usually both. In the middle west, some firms use a large tank of water into which the tomatoes are dumped. Others spray the piles of tomatoes in baskets or crates, while many merely stack loosely to insure good ventilation. But to be a success, the method developed must be considered in the light of the fact that the canned tomato industry is widely distributed over the country, is composed of a large number of small plants, some near water and some not, and is not an industry operated by a very high class of labor.

That the tomato industry is a fertile field for the application of economies in operation is evident by the development of a tomato product which contains all the food and condimental value of the tomato, reduces loss from 50 to 5 per cent and produces a product which can be sold for about one-half of the price of the regular canned tomato, figured to the basis of equal content of raw material. I refer to the tomato paste industry.

In the manufacture of this product, tomatoes pass through large washing machines, then over sorting belts where the unsound material is picked out by hand, thence into a crusher and immediately into the previously mentioned cyclone machines. These consist of horizontal perforated metallic cylinders slightly open at each end, about two feet in diameter and three to four feet long, with a rotating paddle rotating on the axis of the cylinder and barely escaping the sides. The violent beating of this paddle forces the juice and flesh of the tomato through the perforation, while the seed, skin and cores, denuded of their juice, pass out through a small gate at one end of the cylinder. This dry material, comprising about 5 per cent of the original tomato, is called cyclone waste, and will be referred to again.

The juicy mass of liquor and ground tomato flesh from the cyclone perforations is called in the trade cyclone-juice, as distinguished from the more or less clear, watery looking liquid in the tomato which is familiar to all. This cyclone juice is then concentrated in the proportion of about 5 or 6 to 7, according to the character of the raw stock and the quality of the finished product. This industry, while a subsidiary of that of the whole tomato, has developed quite a respectable technology of its own in which is a splendid field for good engineering practice.

For instance, the market value of the finished pasty mass, called tomato paste, is proportional to the bright red color; the freshness of the tomato flavor, and the thickness, and, as stated previously, the ordinary concentrating methods of evaporation serve to destroy color and taste, while pastiness renders it difficult to handle in the kettles without burning or to transfer from the kettles to the fillers. To save color we are inclined to sacrifice pastiness (concentrate loss); to make it thicker and thus put more tomato in a can, there is a tendency to sacrifice color, taste and ease of operation.

Thanks to the prodding of necessity, these baneful effects have been minimized by adopting more efficient

means of evaporation both at atmospheric pressure and in vacuo, while the handling of the pasty mass likewise has now reached a state of satisfactory development. Overcoming difficulties of concentration and handling, together with mechanical applications as substitutes for the hand labor of the ordinary peeling processes is an eloquent example of the potentialities in engineering practice as it may be applied to food problems. This development cuts down the labor necessary to handle about 5,000 baskets per day from somewhere near 140 persons to about 35, reduces the tomato waste from about 50 per cent to about 5 per cent, eliminates all waste to the consumer by giving him a product free from seeds and cores, saves tinplate by using a can containing 30 square inches in comparison with one containing 91 square inches, reduces shipping cost from the fact that the standard paste can contains 6 ounces net weight, while the can of standard tomatoes of equal weight of tomato solids contains 32 ounces net weight, and at the same time materially lessens storage and conserves transportation space. This tomato paste manufacture, of course, puts the goods in a form somewhat different from that with which the housewife is familiar, but a publicity campaign should demonstrate to the intelligent housewife that not only is she effecting a direct saving of 50

per cent of her bill for tomatoes, but also indirectly in that by this means she is enabling what is now waste to be utilized for other food purposes, directly as edible fat (oil) and cattle food (press cake).

But if we again apply economics in operation we find that even this 5 per cent cyclone waste can be utilized. As stated above, it consists of the comparatively speaking dry cores, skins and seeds of the pulped tomatoes in the proportion of about two-thirds wet skins and cores, water, and one-third wet seed. These seeds contain a valuable edible oil which closely resembles olive oil: in fact, so much so that in Italy it has been largely used for adulteration of olive oil. The press cake remaining after removal of the oil is valuable for stock food. Inasmuch as the cake is ground up for this use, the skins can be ground in with it, thus allowing absolutely no loss and rendering all of the tomato entering the plant a valuable commercial commodity.

Thus we see that simple as tomato packing seems to be, it is notwithstanding an industry in great need of development. It has grown to huge proportions in volume of business but has not developed in the mechanical end at all commensurate. Thanks to the operation of the Food and Drugs Act, and the meritorious activities of the state inspection and control

Stevenson Deputy Administrator in Illinois.

Robert Stevenson, Jr., executive secretary to Harry A. Wheeler, Federal food administrator for Illinois, has been appointed deputy food administrator. The magnitude of the work in Illinois made necessary the designation of an aide with powers to act for Mr. Wheeler at times, and Mr. Stevenson's experience qualifies him eminently for the place.

Erratum.

By an unfortunate slip, the advertisement of the Downey-Farrell Company, on page 394 of the July issue was incomplete in that the reference therein to Mr. Keebler's very interesting article on "Churning Oleomargarine" was not filled in in such fashion as definitely to state which of the three large illustrations was of the Downey-Farrell Company's plant. This advertisement should have referred to page 363 of the July issue—the illustration over the caption "Apparatus for Melting Hard Oils in a Sanitary Factory."

Dr. J. M. Moore, Food Commissioner of Alabama, has been appointed Director of the Poultry and Egg Division of the Federal Food Administration for that state.

RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

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1,266,668. Feeder for fruit-slicing machines. George W. Drew, Oakland, Cal.

1,266,720. Macaroni and spaghetti machine. Vito G. San-giorpio, Meriden, Conn.

1,266,983. Drying apparatus for fruit. George D. Parker, Riverside, Cal.

1,267,144. Fruit and vegetable evaporator. Whilmore R. Taylor, Germantown, Pa., assignor to Eastern Mfg. Co., Philadelphia, Pa.

1,267,449. Manufacture of synthetic milk. James Piperno, New York, N. Y.

1,267,655. Fruit-drier. Albert N. Godfrey, Wenatchee, Wash.

1,267,850. Machine for handling fish. Simon Cooper, New York, N. Y., assignor to Gorton-Pew Fisheries Co., Gloucester, Mass.

1,268,195. Apparatus for coating confectionery and the like. George White, Jersey City, N. J., and George S. & George R. Baker, London, England, assignors to Panayiotis D. Panoulis, Jersey City, N. J.

1,268,658. Baker's peel. Albert H. Woolley, San Francisco, Cal.

1,268,813. Machine for mixing flour and other materials. Israel Benjamins, Bath Beach, N. Y.

1,268,854. Popcorn brick and bar cutting machine. Eustace R. Knott, Sharon, Mass.

1,268,860. Food product and method of making the same. Guadalupe Lopez de Lara, Guadalajara, Mexico.

1,268,865. Process of pressing yeast. Ejnar A. Meyer, Bristol, England.

1,268,919. Device for handling crackers and the like. Albert Bleile, Dayton, Ohio.

1,269,100. Process of treating grain for beverages. Bertha Leibbrandt, Santa Cruz, Cal.

1,268,115. Loaf-sugar-packing machine. Charles C. Reese, San Francisco, Cal.

1,269,412. Fruit and vegetable drier. Michael Endres, New Philadelphia, Ohio.

1,269,754. Bread-making process. Frederick P. Siebel, Chicago, Ill., assignor to Siebel Institute of Technology, same place.

1,269,843. Method of canning corn. Harry A. Nelon, Charlottesville, Va.

1,269,866. Machine for sealing bread-wrappers and the like. Richard Sejnoha, Wolsey, S. Dak.

1,269,966. Apparatus for treating raisins. Artemas P. Shepard, Fresno, Cal.

1,270,039. Slicing machine. Herbert G. Miller, The Dalles, Oreg., assignor of one-half to Pacific Evaporator Co., Portland, Oreg.

1,270,040. Coring-tool. Herbert C. Miller, The Dalles, Oreg.

Wilhelm as a Press Agent

By CHARLES RYAN
of the U. S. Food Administration.

“THE inner front,” as Germany terms the morale of her people, is probably stronger today than it has been since the Prussians battered down the Belgian defenses at Liege. Probably not since the war started has there been so remote a possibility of internal disruption within the German empire. And yet we hear constantly that the Germans are in danger of a break, that the morale of the people cannot much longer withstand the tremendous strain of four years of war.

Should the war last four years longer we would probably continue to hear these reports of stress and strife within the “fatherland.” As propagandists, the Germans have shown that they are without a peer.

Some of these reports undoubtedly have been true. Germany must have suffered tremendously. But, nevertheless, no report has come across the German borders and been widely disseminated in the Allied countries unless its dissemination could in some way prove beneficial to the Prussians. In the first three years of war they built up in all of the countries aligned against them a firm conviction that Germany was nearing the end of her rope and could not hope to hold out much longer.

In the fall of 1914 Germany began to feel a shortage of food. The reports in which this was reflected led the Allies to believe that the enemy could not hold out for another six months. Since then, these reports have gone from bad to worse. In spite of the general tenor of German newspaper expression, a definite break was avoided.

There has been scarcely a month since then that the German newspapers have not adopted “yellow journalistic” methods to portray conditions which proved conclusively that the German people must soon come to their senses and rise up in wrath against a system which could allow them to be down-trodden and starved. The very fact that these newspapers continued to express such statements seems to those who are familiar with the German mode of government to prove that the government itself deliberately fostered this subtle form of propaganda.

Only those who have carefully watched developments within the German empire realize how absolutely useless it is to base upon current newspaper reports any sound impression of what is actually happening in the domain of the kaiser. These newspapers are bound to come through the lines, and without a doubt have had their effect upon people in the Allied countries.

Possibly the German editors and writers have prepared them in good faith. But there is one thing to be borne in mind in reading them—the predicted never happens. The statement that Germany will be starved out is a sophistry which few intelligent people can continue to believe.

It is impossible at the present time to make any public statement giving the details of Germany's food situation. It is enough to say that the confidential reports which come to our Government absolutely disprove most of the reports contained in German newspapers which are smuggled through the lines and the revolution-promising rumors carried by the news associations of European neutral nations.

When England entered the war the whole world believed that her effective blockade of Germany would soon bring the kaiser to his knees—that the Germans would surrender to hunger even if their defense could not be battered down by shot and shell.

On the other hand, there is not the slightest doubt that Germany was fully as confident that her submarine activities would soon bring the Allies to the famine point.

Neither of these things has happened.

The Allies have found that, cut off from outside supplies, Germany became self-supporting.

Germany has found that the superior sea forces of Great Britain—and later of Great Britain and the United States combined—have drawn the fangs of her sea serpents.

From start to finish this has been an economic war. Deprived of the use of the seas, Germany has attempted to lay waste the ocean traffic of the world and to make valueless England's “freedom of the seas.”

To a certain extent, Germany has succeeded. She has so decreased the world's tonnage that the strength of the Allies may be maintained only if every available ship is made to ply at full capacity. Briefly, this means that every possible ship must ply to the nearest source of supplies—America. It has placed upon us the responsibility of supplying the entire requirements of the Allies, so far as we are able.

In the past year we filled a trifle more than 50 per cent of the food deficit in the countries fighting against Germany. In the coming year we hope to be able to supply almost all of the food needed to fill this vacuum. If we can do this it will be equivalent to increasing the world's tonnage by 1,500,000 tons.

But to go back to the German situation. At no time since the war started have the Germans had more reason to feel confident that their food problem was solved. Their harvests have been large and many of the early evils of distribution have been eliminated. The yield from more than 2,000,000 acres of Roumanian wheat will soon be available, and there seems every reason to believe that the difficulties of its transportation have been well worked out. Not quite so promising for Germany is the situation in the Ukraine, although the German war lords now seem certain that they will be able to assure its partial movement. In Poland there are thousands of acres of rye which will be available to the German government.

Germany has suffered probably less than any of the Allied powers through shortage of agricultural labor. Her policy in conquered territory, while certainly not endearing Germany to the people of the invaded lands, on the other hand has resulted in heavy production. Good results have also followed her system of having prisoners of war till her fields.

While compulsory rationing is still in force throughout the empire, many of the rations have been increased and the people seem confident that they will be given still more liberal allowances when the heavy movement of new crops begins to affect the markets.

In considering this German problem, we must remember that the native German is firmly convinced that his kaiser is fighting for justice and an ultimate

and lasting peace. The atrocities of which we have heard so much are unknown in Germany. In fact, the Germans have been taught that the horrible brutalities of this war have been practiced by the English and French and that only as measures of justifiable reprisal have their own soldiers dealt in cruelty and barbarity.

And the German people have well realized that a peace without victory would mean an end to their national existence. They have become thoroughly convinced that only if victory rests with them may they hope to hold a place among the world powers. Since the war began, they have been taught that peace in which they did not dictate the terms would mean an end to their commerce and years of toil before they could repay the debt incurred to prosecute their war. Their every action has shown that there can be no peace except a German peace—unless Prussianism is thoroughly and completely crushed.

And now, with the new harvest coming in and with the hope of abundant foods to carry them through the coming year, they are more than ever confirmed in the belief that they will be victorious. Even if the fall should bring them again face to face with food stringencies, they will have a ray of hope to buoy up their courage and will realize that each year has seen them gain in strength so far as internal conditions are concerned.

If a break should come, there is every reason to believe that it will not come from within. If this war should last for a generation, we must realize that we cannot hope for peace except on German terms so long as the German people are able to maintain an army in the field.

So much for present conditions in Germany.

A break was predicted in 1914 and it did not come.

Famine was predicted in 1915 and it did not come.

In 1916 the whole world believed that Germany could not feed herself until another harvest.

And in 1917 the Allies read reports that the situation was becoming alarming for Germany and that a revolution was bound to come before the end of the year—and it did not come.

In 1918 we are hearing that Germany has reached the end of her rope and cannot hope to weather another winter.

These same things have been said ever since the war started. It is interesting to note how similar have been articles written in good faith about Germany's food situation in each year of the war. And similar articles could be written today in good faith and based upon reports which appear to be reliable, but very probably they, too, would have the same fault which has marked all the others—the predicted would not happen.

Just as an example, showing the extent to which German propaganda has been swallowed, it is interesting to reproduce an article written just about a year ago. Every statement in it was made upon good authority, most of them based upon digests of foreign press news, translated by the British War Office. At the time it was written, I thought it was a very good story. I spent a good deal of time and had more than a little trouble in investigating the situation and was firm in the belief that my deductions were sound. I still believe they were sound deductions, but they had one fault—they weren't true.

This very same story could have been written at any date since the early fall of 1914. There has not been a time since then that the current reports of German internal conditions were not just about similar to those I had at hand in the summer of 1917. It may be interesting to read the article with that point in mind and recognize a few of the German reports which have been flashing around the world with amazing frequency for the past three and one-half years.

"Germany's Inner Front" it was called and it read as follows:

"The inner front," as Germany terms the general morale of her populace, is beginning to bend beneath the strain of a food situation which is daily becoming more serious. The fear of starvation has Germany in its grasp, according to newspapers which have found their way through the lines. There is grave discontent over steadily increasing food shortages and even graver discontent over rapidly soaring prices. The people's cry that they are ill nourished and that the physical well-being of future generations is being undermined are reflected in the German press. Little children are underfed. The adult population, while not actually starving, is apportioned so little food that nothing short of disaster confronts the Empire. Only the soldiers are receiving sufficient food to maintain health and strength.

Germany is paying one of the inevitable tolls of actual warfare. Escape is impossible in the land where battle rages. Where there is fighting there can never be agricultural production.

But Germany is not alone in decreased production. She has maintained her output of foods on a higher level than any of the Allies or many of the neutrals affected by the war.

There is only one thing which has kept Germany's actual suffering and hardship away from other European nations. That one thing is the succor extended by America. Germany's situation is serious—so serious that it almost portends a definite break which would spell victory for our cause. But, even so, Germany's situation is no whit more serious than would be the situation in the lands of our war associates were America to withdraw her support. Without our food supplies, they would soon be in Germany's position—and the war would be over. Only the despotie, absolute and complete control exerted over his people by the kaiser and his underlings could force a half-starved nation to continue its devastating career of militarism.

General food scarcity has led to the birth of many evils almost unknown in Germany before the Huns mobilized in 1914. It has put a premium upon theft and dishonesty. It has made a virtue of successful violations of the law. Growing crops are being stolen from the fields. Potatoes and other root crops are being purloined from their storehouses on the farms. Even cattle are being slain under cover of darkness and the meat taken away to be hoarded. Surreptitious sales as a means for evading the spirit of the food ticket regulations seem to have become more or less general. Why, counterfeiters are even selling spurious food cards at amazing prices.

The German press is bordering upon a panic as the result of final reports on the potato crop. The fall crop was looked to as Germany's one hope for sufficient food to carry the nation through the winter. Final reports indicate that the crop has been a total failure. The Government, however, claims that the reports are misleading. It declares that the farmers have lied about their yields, fearing general shortages, and are hoarding their crops in the hope of surreptitiously selling them at exorbitant prices. If this be true, Germany faces a menace from more than one direction. She has not only to cope with national dishonesty on a scale that threatens the safety of the nation, but she is confronted with the grim fact that the crop was of less than normal quality and will not stand storage except under unusually favorable conditions. The hoarders are more than apt to find that their hoardings will be wasted through the ravages of rot and spoilage, even if successfully hidden from the police.

It is that from which we are protecting the Allies. Were we to refuse them our aid, refuse to save that they could be fed, we would be putting a premium upon dishonesty, forcing them to lie about their production, a few hoarding that they could have plenty, while the majority would die of starvation.

Even with autocratic control, Germany has been unable to rob the food question of its grim alarm. It has been unable to maintain pre-war production and unable to quiet the angry growlings of an ill-fed and angry populace. Many of the German newspapers are openly criticizing the Government and predicting revolt and uprising.

So general have become thefts from the fields that curfew laws are being strictly enforced in practically all of the agricultural sections. Only with special police permits can any person traverse a cultivated field in the hours of darkness. Even owners of the farms are forbidden to travel on paths through their fields between specified hours. It is unlawful to drive cattle at night or to transport animals or meats in carts or wagons under cover of darkness.

Such legislation is not needed in other European countries. And the only reason it is not needed is because the United States has been providing sufficient supplies to separate the populace from the pangs of hunger. Were we to stop shipping food abroad, it would be only weeks, or possibly days, before even more stringent regulations would be needed to curb the fury of ill-fed peoples.

An armistice with Russia, opening up her great granaries and storehouses, was expected to prove the panacea for many of the German ills. The difficulty, the impossibility, of transport has robbed this of its value.

There is general hardship in all of the countries of Europe, but the babies and children of our immediate associates in this war are not being starved. America is making possible their salvation. It is different, though, in Germany. From one city 16,000 young children were sent into the country for the summer. Had those children been in good condition, they would probably have gained five or six pounds apiece in weight. But those little tots were almost starving. That was why they were sent out of the city, where they could no longer be fed, to farms where it would be possible to give them the bare necessities of life. A German newspaper reported that there was an average gain in weight of 15 pounds in three weeks.

Only children below the age of five, nursing and expectant mothers and invalids are allowed to use milk. Reductions in milk allowance have been necessitated in many of the countries tied by bonds of war to the United States, but in none of them has the situation reached such a critical point. In Germany expectant mothers are not given an allowance of milk until they have been pregnant for six months—and then the amount is less than one pint a day. Until the child is weaned, they are kept on this ration, with the addition of half a pound of farinaceous foods and a pound and a half of bread—the black war bread which is now the only kind seen in Germany. The press is indignant, calling attention to the fact that the ration for women who are about to give more men to the nation makes no mention of meats, fats or sugar. "We simply must not remain satisfied," one editor wrote. "Where there is a will, there is a way."

The fodder shortage is so acute that twigs and branches of trees are being cut and chopped as fodder for horses and ruminants, including goats. Horse-flesh is now taking the place of pork in German sausage. More often than with pork, it is mixed with rabbits and other game. An indication of the hog shortage is gleaned from the fact that the pre-war average slaughter of hogs at Leipzig has dropped from 5,000 to 100 a week. Meat animals have been killed off because there is no longer suitable food to keep them in fit condition for slaughter. Horses and even poultry have been put on rations.

Germany has been reduced to this state simply because she has not the United States to fall back upon for succor. The same story would be duplicated within a few months throughout Europe should the American support be withheld. Things would probably be even worse with our co-belligerents, because a greater proportion of their productive territory has been ravaged

by war, and much of it is now held by Germany. Germany's richest fields have been untrampled by armies, while she has gained in addition the fertile fields of the Lower Danube and the western fringe of Russia, known as the finest wheat land in the world.

German production has dropped at an alarming pace within the past year. It is on, if not actually below, the danger line. Famine threatened last winter. It is much nearer this winter. German production has decreased, but German production has not decreased to the same extent that has marked the falling production of her enemies, with the exception of the United States.

"The inner front" in Germany is breaking, if indeed it has not already snapped. "The inner front" in the lands of our co-fighters, however, remains firm and strong. It is being held safe by the food wall America made between those people and starvation.

But that wall will not stand alone. The instant we withdraw our support it will topple and fall. If we should cut off all exports today, within two months or less there would be no nation in Europe which could continue war unless they could force their armies to fight with the knowledge that behind them were internal conditions which parallel those in Germany today. The old and the infirm would soon fall victim to the ravages of disease and illness that would take strong hold of constitutions weakened for want of food. Little children and babies would die—and women would be too weak to bring new ones into being.

That's what we are up against. We are constantly faced with a menace which has already descended upon Imperial Germany. Unless we can send food to Europe, the sacrifices in men, money and munitions already made have been in vain. Herbert Hoover, the Food Administrator, tells us that there is not enough food in America to feed us and Europe too, unless we save and conserve.

It is our duty to see that the Allies' "inner front" shall not be broken."

The winter of 1917-18 was comparatively mild in Germany. Climatic conditions resulted in better crops than were harvested the previous year, and partly because of these better crops and partly because of more efficient organization the German authorities were able to lay in much larger stocks of potatoes than in the previous year.

And the weather has been propitious for other crops as well. Frost interfered only slightly with transportation and rations were maintained pretty generally on a larger scale than had been anticipated. The potato ration, in particular, was kept up to the standard figure of seven pounds a week in almost all parts of Germany, nowhere falling below six pounds per week.

Control of the grain crops was more drastic and, consequently, distribution of food more equal than before, the self-providers being more strictly controlled.

The situation has been easier this year than last, not only during the winter months but through the spring. This is untrue only of the late spring and early summer months when grain became unusually scarce. Early harvests, however, soon remedied this condition.

The fact that the new crop would soon be harvested seemed not to figure in the minds of those who "played up" bread shortages in Germany and Austria last June. They appeared to give little weight to the fact that, at most, the serious cereal shortage would last hardly a month.

Germany is not starving; Germany has at no time been starving; and no thinking person who has studied internal conditions in Germany can for a minute feel justified in believing that Germany will ever starve unless unusual weather conditions should cause crop failures throughout middle Europe.

RETAIL PRICES

Average price per pound	Average price per 100 Calories		Lima, Ohio (Typical small town)	Boston, Mass.	Burlington, Vt.	Trenton, N. J.	Newark, Del.	New York, N. Y.	Pittsburgh, Pa.	Washington, D. C.	Philadelphia, Pa.	Richmond, Va.	Cincinnati, Ohio
CEREAL PRODUCTS													
6.4	.40	Wheat Flour, War Std., 49 lb. bag	330	343	330	340	360	300	310	320	340	320	325
7.3	.46	Rye Flour, Std., 24½ lb. bag	200	172	.....	220	.....	190	165	196	200	220	150
7.1	.44	Graham Flour, 10 lb. bag	70	70	75	80	.....	70	70	80	85	90	70
11.3	.69	Corn Starch, lb.	12	9	12	13	12	9	9	10	10	13	12
7.8	.49	Corn Flour, 5 lb. bag	40	35	35	40	45	40	40	37½	45	35	33
6.5	.40	Corn Meal, lb.	6	6½	7	8	6½	7	7	6	7	6	6
7.7	.47	Barley Flour, lb.	8	7½	8	10	10	8	11	7	9	9	7
8.9	.49	Oatmeal, lb.	10	7½	8	8½	8	8	9	10	9	10	7½
8.0	.44	Oats, Rolled, bulk, lb.	9	7	8	8½	8	7	8	7	8	.....	7½
12.6	.77	Rice Flour, lb.	15	12	18	15	14	12	15	13	14	12½	12½
10.1	.64	Buckwheat Flour, lb.	10	.....	.....	10	.....	9	.....	.....	10	12	.....
8.9	.55	Hominy Grits, lb.	11	.....	.....	9	.....	8	12	8	9	10	7½
10.4	.57	Quaker Oats, 20 oz.	14	10	12	12	13	10	11	12	14	12	12
12.7	.80	Rice, Fancy Head, lb.	15	12	15	13	14	11	13	12½	15	15	13
11.7	.72	Barley, Pearled, lb.	15	8	.....	9	20	8	9	10	10	12½	10
9.5	.80	Bread, lb.	10	7	10	10	10	10	10	10	8	10	10
22.4	1.18	Crackers, Graham, lb.	22	20	25	22	20	22	25	.....	25	25	18
22.9	1.19	Crackers, Oatmeal, lb.	22	24	.....	25	.....	22	25	35	25	.....	20
14.4	.88	Macaroni, lb.	15	.....	18	20	20	16	12	15	18	.....	15
SUGAR AND SYRUP													
9.0	.49	Granulated Sugar, lb.	9½	8½	9	9	9	8	9	9	8½	9½	9½
8.4	.58	Corn Syrup, 10 lb. pail	85	.....	.....	100	.....	50	.....	90	90	100	75
30.1	2.00	Comb Honey, lb.	28	52	35	35	.....	.....	25	30	35	35	35
MISCELLANEOUS													
31.7	1.41	Cocoa, Bulk, lb.	35	25	.....	.....	50	20	25	.....	25	30	25
30.8	5.13	Eggs, Fresh Gathered, Firsts, doz.	46	49	50	65	48	60	51	50	55	48	43
5.8	1.87	Milk, qt.	12	15	.....	14	12	10	13	14	14	.....	13
33.3	1.60	Cheese, American, Cheddar, lb.	35	32	35	38	33	33	33	35	32	35	35
FATS													
52.1	2.20	Bacon, Sliced, lb.	60	48	60	50	50	44	47½	50	56	50	50
52.4	1.51	Creamery Butter, Fancy, lb.	54	49	55	65	50	52	49	58	60	60	52
32.1	.78	Pure Leaf Lard, lb.	35	30	35	35	33	34	32	33	32	35	30
33.7	.90	Oleomargarine, Uncolored, lb.	35	32	34	35	40	32	30	27	38	36	35
33.4	.95	Nut Margarine, Uncolored, lb.	35	31	34	35	36	30	31	32	35	36	35
100.0	2.50	Italian Spanish Olive Oil, qt. tin	250	.....	225	200	140	275	200	225	300	200	200
35.8	.90	Cottonseed Oil, qt. tin	85	65	.....	80	80	53	90	60	75	65	75
36.5	.91	Corn Oil, qt. tin	75	65	.....	65	71	75	80	75	75	80	75
43.6	1.09	Peanut Oil, qt. tin	75	.....	.....	.....	.....	85	125	.....	.....	.....	75
30.0	1.10	Peanut Butter, lb.	30	25	20	48	32	35	25	35	35	35	30
FRUITS													
20.1	1.52	Evaporated Apples, lb.	25	25	20	.....	15	20	.....	20	22	.....	.....
17.0	1.42	Evaporated Peaches, lb.	20	17	20	22	18	18	14	20	20	15	15
14.1	6.71	Canned Peaches, No. 2½, Std., 29 oz.	25	25	35	35	28	20	25	35	25	25	25
16.1	2.30	Canned Pineapples, No. 2½, Std., 30 oz.	35	30	30	38	23	28	27	35	30	40	30
14.2	.90	Raisins, Seeded, pkg. 15 oz.	15	14	18	15	14	14	15	18	14	15	15
15.8	1.36	Prunes, Medium Size, lb.	20	14	16	22	18	15	17	18	16	20	15
VEGETABLES													
3.7	1.23	White Potatoes, lb.	4	5	5	3½	3	5¾	6	4½	3	5	2½
9.0	2.00	Sweet Potatoes, lb.	13	.....	.....	.....	.....	.....	.....	.....	10	.....	8½
5.1	2.55	Onions, lb.	5	6	10	7	4	5	8	.....	4	.....	5
16.0	1.02	Navy Beans, Dry, lb.	17	15	18	18	14	17	17	15	16	17	16
13.0	14.44	String Beans, Canned, No. 2, Std., 19 oz.	20	15	10	20	.....	13	20	15	20	25	18
13.3	3.02	Corn, Canned, No. 2, Std., 20 oz.	13	15	22	20	15	16	17	18	20	20	15
13.3	5.32	Peas, Canned, No. 2, Std., 20 oz.	18	15	22	25	15	15	17	15	20	20	15
15.1	.94	Split Peas, lb.	15	13	15	30	.....	13	12	15	18	.....	15
22.8	1.23	Peanuts, Unshelled, lb.	25	30	25	25	.....	16½	21	30	25	.....	25
9.9	9.90	Tomatoes, Canned, No. 3, Std., 33 oz.	20	22	25	25	18	20	20	20	25	20	29
5.0	4.17	Cabbage, lb.	6	4	8	5	5	5	10	7	3	.....	2½
4.6	2.70	Beets, lb.	4	5	5	8	10	3	7	15	6	5	2½
3.9	2.17	Turnips, lb.	4	5	5	3	.....	4	7	.....	2½	.....	2½
MEATS AND FISH													
36.5	5.62	Beef, Round Steak, lb.	40	45	55	47½	45	45	35	50	45	35	30
39.6	7.92	Veal Cutlets, lb.	45	55	50	47½	50	50	45	50	50	45	40
34.9	4.01	Leg of Mutton, lb.	35	.....	45	37½	45	35	45	.....	30	30	25
40.0	4.76	Leg of Lamb, lb.	45	40	50	37½	50	42	45	45	42	40	40
37.6	3.06	Pork Chops, lb.	38	42	38	38	45	50	38	45	40	37½	40
49.1	2.58	Ham, Sliced, Medium Fat, lb.	60	48	55	50	50	75	50	50	50	40	50
46.0	15.86	Chickens, Broilers, lb.	50	.....	55	58	40	48	50	45	60	50	45
25.6	7.11	Salt Cod, lb.	25	20	30	22	.....	32	24	.....	30	.....	20
26.2	2.62	Salt Mackerel, lb.	25	27	.....	30	18	27½	27½	25	28	25	25
29.8	6.62	Halibut, lb.	35	35	35	45	18	35	30	35	40	.....	30
29.6	4.63	Salmon, lb.	35	35	18	55	.....	50	35	35	27½	.....	25
29.3	4.44	Salmon, Canned, No. 1, Tall, 1 lb.	30	28	30	42	29	25	28	30	30	30	30
32.5	8.78	Trout, lb.	38	.....	.....	.....	20	85	25	20	20	25	25
22.7	7.09	Whitefish, lb.	30	15	.....	.....	25	20	25	.....	30	.....	25

AUGUST 1, 1918

	Raleigh, N. C.	Tallahassee, Fla.	Birmingham, Ala.	Atlanta, Ga.	New Orleans, La.	Little Rock, Ark.	Detroit, Mich.	Chicago, Ill.	Madison, Wis.	Topeka, Kans.	Lincoln, Neb.	St. Paul, Minn.	Minneapolis, Minn.	Reno, Nev.	Rapid City, S. Dak.	Fargo, N. D.	Tucson, Ariz.	Portland, Ore.	Berkeley, Cal.	San Fran- cisco, Cal.
0	350	360	352	330	365	325	326	310	290	315	317	325	330	280	285	320	338	290	315	305
...	180	180	176	185	196	175	147	160	169	220	200	165	165	225	175	147	195	175	190	190
55	90	70	78	90	90	85	70	70	64	80	75	65	65	70	65	70	70	70	75	75
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3	50	40	50	40	40	38	50	38	33	35	40	40	40	45	40	30	40	40	40	40
6	6	6	5½	6	6	6	6	6½	6	5¾	7	7	8	9	7½	6	7½	7½	8	10
6	8	8	7½	10	7	5	7	7	7	8⅓	8	8	10	8	6	8	6	8	8
...	10	12	12	10	7½	10	6	10	7½	8¾	8	9	12½	10	6	8½	10	10
7½	10	7½	7½	9	6	8	8½	8	8¾	8	9	12	10	6	10	8	9	10
...	15	12½	12½	12½	11	7	13	12½	12½	15	12½	12½	12½	13	12	15	12½	12½	11
...	10	10	10	10	14	8	10	9	10	7	15	12½	12½	12½
6½	8	7½	6	7½	7	8	10	7	12	7	10	10	12½	12½	8	10	9
11	15	15	15	13	12	14	12	12	13	13	15	12	12	14	15	16	15	15	15
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32	35	32	35	35	35	33	33	34	35	35	30	32	45	40	35	35	38	40
200	225	240	143	175	85	225	150	180	150	195	160	150	190	225	150	250
75	80	30	65	75	65	38	85	70	75	95	75	75	79	50	75	55	65
65	80	75	70	42	80	70	75	75	75	75	75	79	65	61	85	75	75	65
.....	70	38	75	95	110	85	85
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15	25	25	20	20	18	25	20	17	20	22	20	17	20	20
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25	32½	25	25	30	25	25	22	30	25	22	30	25	25	25	30	21	30	25	25	20
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19	25	12½	15	20	15	15	15	18	13½	18	20	15	15	15	15	15	20	20	20	15
15	20	15	10	15	15	15	18	15	16	20	14	15	12½	15	12½
22	20	12½	15	20	25	28	25	25	30	27½	25	25	25	25
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5	7	6	7½	8	3½	7	5	3	5	6	5	2	3½	6	5	7½	5	2	2½
.....	5	5	3	2	2½	5	5	3	1	3	3	5	7½	5	3	3
.....	4	5	3	2	2½	3¾	5	3	3	3	3	5	7½	6	3	3
40	45	30	45	35	30	40	32	28	28	40	38	35	35	32	35	35	35	35	27½	32
40	45	35	40	35	32½	40	35	35	30	40	35	35	30	40	35	35	45	32½	35	40
30	50	50	40	35	40	30	30	28	25	40	28	35	30	30	40	35	40	35	30	40
35	60	50	40	40	40	40	38	40	35	45	35	38	40	35	45	40	38	37½	40
40	45	30	40	35	37½	38	35	40	35	38	32	35	30	40	40	35	45	40	40	40
50	40	55	45	40	50	50	50	45	45	60	60	50	50	55	50	45	50	50	60	50
40	40	40	40	40	40	45	60	38	48	50	39	45	45	55	45	40	45	40	60	60
.....	30	20	25	35	29	30	32½	30	30	25	20	22½	35	25	40	17½	25	20
.....	25	30	20	35	25	25	28	25	40	20	25	15	35	30	25	30	35	35
.....	40	35	30	28	30	35	30	25	30	30	28	22	27½	20
.....	25	27½	35	35	30	28	33	30	28	30	30	35	22	22½	20
25	30	28	18	30	25	30	30	30	32½	30	30	30	30	30	35	60	25	30	25
.....	17½	30	20	40	23	27	25	33	23	18	50	30	30	20	100	100
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Saccharin Wins in New York

Appellate Division of the Supreme Court.

Present: Hons. John Proctor Clarke, P. J.; Frank C. Laughlin, Victor J. Dowling, Clarence J. Shearn and Edgar S. K. Merrell, J. J.

Appeal by the defendant from a judgment of conviction rendered by the Court of Special Sessions of the City of New York.

William C. Breed of counsel (Edward A. Craighill, Jr., with him on the brief; Breed, Abbott & Morgan, attorneys) for appellant; John F. O'Brien of counsel (Terene Farley and William H. Kehoe with him on the brief; William P. Burr, corporation counsel) for respondent.

Laughlin, J.—The defendant is a domestic corporation and its conviction, which was by a divided court, was for having in its possession and offering for sale as a beverage bottled strawberry soda, which it was alleged was adulterated in that saccharin, a deleterious ingredient, had been used therein as a sweetener or substitute for sugar, injuriously affecting the quality of the soda water, in violation of subdivisions (b) and (f) of section 68 of the Sanitary Code and a resolution of the board of health adopted August 22, 1911.

There was a label on the bottle containing printed matter as follows:

"Telephone No. 3609 Harlem. Excelsior Bottling Works, Inc., 407-411 East 121st Street, New York. Strawberry. Capacity 26 ounces, sweetened with sugar and one one-hundredth of one per cent of Saccharin (Benzo-sulphinide). This bottle is not sold, but must be returned when emptied."

It was conceded that the soda water contained the quantity of saccharin specified on the label, namely, one-hundredth of one per cent. Section 68 of the Sanitary Code, so far as here material, provided as follows:

"No person shall have, sell or offer for sale in the City of New York any food which is adulterated or misbranded. The term food as herein used shall include every article of food and every beverage used by man and all confectionery.

"Food, as herein defined, shall be deemed adulterated: * * *

"(b) If any inferior or cheaper substances have been substituted wholly or in part for the article. * * *

"(f) If it contains any added poisonous ingredient, or any ingredient which may render such article injurious to health; or if it contains any antiseptic or preservative not evident and not known to the purchaser or consumer * * *; provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

"First, In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced."

Counsel stated on the argument that the provisions of the Sanitary Code are substantially the same in effect, although not in phraseology, as the act known as the Federal Food and Drug Act (34 U. S. Statutes

at Large, 771). It appears that the Secretary of Agriculture requested the Referee Board of Consulting Scientific Experts to investigate and report, among other things, whether saccharin in foods was deleterious to health and whether it reduced, lowered or injuriously affected the quality or strength of the food. The board made a report in writing to the effect that saccharin in small quantities added to food was not injurious to the health of normal adults, and when added in either small or large quantities does not alter the quality or strength of food; but that if so added as a *substitute* for sugar it "must be regarded as a substitution involving a reduction in its quality," for the simple reason that sugar has a food value and saccharin has no nutritive value. The Secretaries of Agriculture, Commerce and Labor and of the Treasury construed the report as showing that saccharin in food was a poisonous or deleterious ingredient as contemplated by the Federal Food and Drug Act and that its *substitution* for sugar in foods "reduces and lowers their quality" and thereupon made Food Inspection Decision No. 135, for the guidance of inspectors of the Department of Agriculture, to the effect that the Secretary of Agriculture would after the 1st of July, 1911, regard foods having saccharin as adulterated under said act. Before that date, however, said secretaries extended the time when the former decision was to take effect, and the Secretary of Agriculture called upon said board to advise whether said decision No. 135 was in accord with the former report of said board, and on the 13th of January, 1912, the board reported, among other things, as follows:

"The Referee Board is compelled, on the basis of the experimental evidence, to hold to the view that the addition of small quantities of saccharin to food does not constitute an adulteration, since there is no evidence that small quantities of the substance are deleterious to the health of normal adults.

The addition of saccharin to foods, in large or small quantities, does not, so far as the findings of the Referee Board show, affect in any way the quality or strength of the food. This statement is not in any sense contradictory to or lacking in harmony with the statement that the addition of saccharin to food as a substitute for cane sugar is a substitution involving a reduction in the food value of the sweetened product and may thus result in a reduction in its quality. The simple addition of saccharin to a food cannot, in the opinion of the Referee Board, be considered as an adulteration through any reduction in the strength or quality of the food, since no such effect follows its addition to the food. On the other hand, the substitution of saccharin for cane sugar, for example, in any food product may result in a decided lowering of food value, and this certainly must be considered as an adulteration.

In the opinion of the Referee Board, the use of saccharin in food in quantities that might constitute a menace to health is improbable, since its extreme sweetness would naturally limit its consumption by the individual to amounts below what might prove injurious (in harmony with the conclusions expressed in the original report of the board). On the other hand, the possibility of substituting saccharin for sugar, thereby lowering the food value of the sweet-

ened products, is a serious menace and one that should be carefully safeguarded."

Thereupon the majority of the secretaries made Food Inspection Decision No. 142, holding that the use of saccharin as a substitute for sugar in sweetened foods constitutes an adulteration because it is only used as a sweetener and it displaces sugar, which has a food value, but they also held that saccharin, when intended for use in the prevention, cure or mitigation of disease and used in products plainly labeled to show that it is intended for the use of persons who, on account of diseases, must abstain from the use of sugar, came within the classification of drugs and was not affected by the decision. That decision, I think, intended to prevent the use of saccharin as a sweetener for food products proper, such as canned vegetables, preserves and candy. It is stated therein that it was found that saccharin was so used in more than 50 food products and that it was possible by such use to produce indigestion. It is quite evident that the secretaries were not considering the use of saccharin in beverages. Secretary of the Treasury MacVeagh dissented in an opinion, taking the ground that one-hundredth of one per cent of saccharin in any food product could not possibly be deleterious to health and that the use of saccharin could be regulated by requirements with respect to labels and otherwise, and that inasmuch as it was not deleterious to health its use should not be prohibited.

So far as appears, the question has not been before the federal courts for decision with respect to the use of saccharin in food products. The resolution of the board of health on which, with the provisions of the Sanitary Code, which do not refer specifically to saccharin, the conviction was founded, was adopted on the 22d day of August, 1911, and it clearly appears by the preamble thereto that it was based on the action of the Secretaries of Agriculture, Commerce and Labor and of the Treasury, on the first report of the Referee Board, which had been misunderstood. The resolution is as follows:

"Whereas, following an investigation made by the Referee Board of Consulting Scientific Experts to the Secretary of Agriculture, Food Inspection Decision No. 138 was promulgated as follows:

"Paragraph 3 of Food Inspection Decision No. 135 is hereby modified to read as follows:

"The Secretary of Agriculture therefore will regard as adulterated under the Food and Drugs Act foods containing saccharin which on and after January 1, 1912, are manufactured or offered for sale in the District of Columbia or the territories, or shipped in interstate or foreign commerce, or offered for importation into the United States."

"Therefore be it resolved, That foods or food products containing saccharin be deemed adulterated under the Sanitary Code."

On the trial, counsel for the People stated the claims of the prosecution as follows: "The People's only contention here is that the action of the board of health in making that ordinance will be sustained upon the ground solely that the use of saccharin in food is a virtual fraud on the public in so far as its food value is concerned. * * * There is no contention in this case that the use of saccharin is harmful in and of itself, but that the position which the city takes in order to sustain the ordinance is that it depreciates the value of food as a food product."

The uncontroverted evidence shows that the use of soda water as a beverage containing this quantity of saccharin could not possibly be injurious to health and that there is greater danger of injury to health from consuming too much sugar than from the consumption of saccharin in such a percentage. It also appears that the use of sugar in any form is injurious to people suffering from diabetes and some other diseases, while the use of saccharin by them to flavor food and render it palatable is prescribed by medical authorities.

The only possible theory on which such use of saccharin could be prohibited is to prevent deception by leading purchasers and consumers to think that the food products had been sweetened by sugar, which contains a food value, and not by saccharin, which has no food value. There is no evidence of deception and the label is designed to prevent deception. Soda water is not a natural food product but is a compound of food products, and I am of the opinion that such use of saccharin comes within the proviso contained in said section 68 of the Sanitary Code relating to a mixture of compounds known by their own distinctive name, and that the label complied with the requirements thereof (*U. S. v. 40 Barrels of Coca-Cola*, 215 Fed. Rep., 535; *Weeks v. U. S.*, 224 Fed. R., 64; *T. B. Washburn & Co. v. U. S.*, 224 Fed. Rep., 395; *U. S. v. 1 Carload of Corno Horse and Mule Feed*, 188 Fed. Rep., 453; *U. S. v. 779 Cases of Molasses*, 174 Fed. Rep., 325). The resolution of the Board of Health was not enacted in form as an amendment of the Sanitary Code and it cannot be given effect as such, for it was not shown that a certified copy was filed with the city clerk as required by section 1172 of the Greater New York Charter as amended by chapter 628 of the Laws of 1904, section 3. The resolution therefore cannot be construed either as modifying or extending said section 68 of the Sanitary Code. The only authority of the board to adopt resolutions with respect to the Sanitary Code was to carry the provisions thereof into effect (section 1262 of the Greater New York Charter). Moreover, since saccharin is not injurious to health, its use may be regulated but cannot be prohibited under the exercise of the police power, and therefore I think the resolution was void (*People v. Breisecker*, 169 N. Y., 53; *People v. Arensberg*, 103 N. Y., 308; *People v. Marx*, 99 N. Y., 377; *People v. Bowen*, 182 N. Y., 1-10; *Curtice Bros. Co. v. Barnard*, 209 Fed. Rep., 589; *State v. Hanson*, 40 L. R. A. N. S., 865; see also *Waite et al., as general appraisers, etc., ap., v. Geo. A. Macy et al., appellees*, U. S. Sup. Ct., N. Y. Law Journal, May 6, 1918). If a standard of purity or with respect to the ingredients to be used in making soda water had been prescribed by the Legislature or by legislative authority then it might well be argued that no other ingredients could lawfully be used in making it (see dissenting opinion of Learned, P. J., in *People v. Cipperly*, 37 Hun, 324, on which the decision was reversed, 161 N. Y., 63). It is perfectly obvious that entirely aside from the question of disease or medical advice some people may desire, especially in hot weather, a cooling beverage that contains no food value or that has been sweetened to render it palatable by the use of saccharin instead of by the use of sugar, and there is therefore no occasion or authority for prohibiting such use of saccharin.

It follows that the conviction should be reversed and the information dismissed.

All concur.

July, 1918.

Canning Compounds Illegal in Pennsylvania

Commissioner James Foust of Pennsylvania believes that the following opinion will drive canning compounds out of that state. He is also of the opinion that manufacturers and wholesale dealers, in order to protect themselves against prosecution, must withdraw all such products from Pennsylvania.

The Superior Court in its opinion reverses an inferior court case against J. R. Fulton for violation of the Pennsylvania pure food law in selling Mrs. Price's Canning Compound, and describes the compound as being boric acid—nothing more or nothing less.

Two important questions were involved. The court below took the stand that the canning compound was not a food within the meaning of the law; that it was composed of 95 per cent boric acid and 5 per cent salt and that 95 per cent boric acid could not be added to the 5 per cent salt. On both points the Superior Court disagreed with the court below. The decision of the lower court was reversed and the record remitted to impose sentence according to law.

The Pennsylvania food law specifically prohibits the use of boric acid to preserve food. The fraud in this case was that boric acid was used in the canning compound and sold under a coined name. Under the definition of food the act reads: "That the term 'Food,' as used in this act, shall include not only every article used for food by man, but also every article used for, or entering into the composition of, or intended for use as an ingredient in the preparation of, food for man."

The decision follows:

Superior Court of Pennsylvania.

Commonwealth of Pennsylvania vs. J. R. Fulton. No. 13 October Term, 1918. Appealed by plaintiff from the order of the Court of Quarter Sessions of Bedford County.

Filed July 10, 1918.

Henderson, J.

The defendant was indicted for a violation of the Act of May 13, 1909, P. L. 520, in selling an article of food and an article used for, and entering into the composition of, and intended for use as, an ingredient in the preparation of food, described as "Mrs. Price's Canning Compound," which was adulterated in that it contained a proportion of Boric Acid. A verdict of guilty was returned by the jury and afterward judgment was arrested by the court and from that order the Commonwealth appeals. The title of the Act is in part: "An act relating to food; defining food, providing for the protection of the public health, and the prevention of fraud and deception, by prohibiting the manufacture or sale, the offering for sale or the having in possession with intent to sell, of adulterated, misbranded, or deleterious foods." The second section contains a definition of the word "food" as follows: "The term 'food' as used in this Act shall include not only every article used as food by man but also every article used for or entering into the composition of or intended for use as an ingredient in the preparation of food for man." Prohibition against the use of Boric Acid is contained in Section 3 which provides "that for the purpose of this Act an article of food shall be deemed to be adulterated * * * 5th. If it

contains any added boric acid or borates," etc. The learned judge of the court below based the decision on a determination that the compound was not food and that it did not contain added boracic acid within the meaning of the Act. It was shown by the Commonwealth that the compound was composed of Boracic Acid and Salt; 94.73% of the former and 5.07% of the latter. The compound as sold in packages which included among other statements the following:

"Mrs. Price's Canning Compound

"Manufactured by

"The Price Compound Company,

"Minneapolis, Minn.

"May be used in canning all kinds of fruit, and is specially valuable for Corn, Beans, Peas, Asparagus, Tomatoes, Etc."

"May also be used in making Catsup, Sweet Pickles, or anything that is liable to ferment. It saves money, time, labor, worry and insures the best results. See our receipt book for instructions on canning and pickling."

The contention of the Commonwealth is that the article sold was food and that it was also used and intended to be used as an ingredient in the preparation of food for man, and was, therefore, within the prohibition of the statute. It was conceded that the salt constituent of the compound was an article of food but the learned judge of the court below was of the opinion that in view of the small proportion of the food product and the large proportion of boric acid in the compound it ought to be assumed that the law was not intended to apply to a preparation composed almost wholly of an article which is not food; that it could not consistently be held that 95% could be added to 5%; that the use of the word "added" in the statute "in common parlance" signifies "to unite the lesser in essence with the greater; the smaller in volume, magnitude or importance with the larger." Pursuing this line of argument with illustrations the court reached the conclusion that the legislature never had in mind such an article of commerce as is under consideration in this case as an adulterated food. This construction, however, overlooks an important part of the statute which covers every article "entering into the composition of or intended for use as an ingredient in the preparation of food for man." In either case, therefore, whether the article sold may be classed as food or is merely a compound intended to be used in the composition of or as an ingredient in the preparation of food if it contain a constituent the use of which is prohibited in food it is within the purview of the statute. We are unable to agree with the learned court that the question must be disposed of on the basis of the proportion of the compound entering into the composition of food. Under such construction the purpose of the law might easily be defeated. A much smaller quantity of the prohibited article than that used in the canning compound might be used without violating the statute. If the proportion of 95% may be allowed, by like reasoning 80% or 70% would be permitted, for the larger could not be said to be added to the smaller quantity. The smaller quantity could not "contain" the larger. But it was not the intention of the legislature to determine the proportions in

which food might be adulterated except in the limited use of sulphur dioxide and sodium benzoate as applied to certain articles. The United States statute contains similar language to that used in the Act of 1909 and in *United States v. Coca Cola Company*, 241 U. S. 265, the court considered the meaning of the word "added" and said, "Nor can we accept the view that the word 'added' should be taken as referring to the quantity of the ingredient used. It is added ingredient which the statute describes; not added quantity of ingredient." This construction is required in the light of the purpose of the legislation which was not only to prevent fraud but to provide for the protection of the public health. What is necessary to promote this object is a legislative question within constitutional limits and the court is controlled by the legislative declaration on the subject. The combination of boric acid with common salt amounts to an adulteration within the meaning of the statute. The term "adulteration" is used in a particular sense. It is the combining of a forbidden substance with an article of food to be sold to the public. But the case of the Commonwealth stands on a broader base than this. The Act defines "food" to be not only every article used as food for man but also every article entering into the composition of or intended for use as an ingredient in the preparation of food for man. It is not contended that the canning compound was not to enter into the composition of food or not intended for use as an ingredient in the preparation of it. The contrary expressly appears. It was not only to be used in the preparation of food but was to become a constituent part thereof. It can not be contended that when a quantity of it was added to the can or jar in the preparation of food it did not become a part of the contents of the can or jar and of course it entered into a food preparation. The letter of the statute prohibits this. It was within the power of the legislature, therefore, to define what should be considered food the defendant offended against the law. It is not to be questioned that the legislature in passing an Act may declare its meaning and construction and such declaration is binding on the courts: *Com. v. Curry*, 4 Pa. Super. Ct. 356; *Com. v. Kebort*, 212 Pa. 289. The definition of Section 2 of the Act is sufficiently comprehensive to cover the case of a sale of this compound intended for use as an ingredient in the preparation of food. It is contended, however, on the part of the appellee that the title of the statute is not sufficiently clear to meet the constitutional requirements. We are unable to agree with this contention. The title relates to food; to the protection of the public health by prohibiting the sale or offering for sale or having in possession with intent to sell adulterated or deleterious foods. This title we regard as sufficiently comprehensive to impose the duty of inquiry as to the contents of the statute and persons dealing in food or in an article to be used in the preparation and composition of food are put on notice of all the statute contains. We are not required to apply critical or strained construction to legislation of this character nor are we at liberty to set aside the legislative will except from imperious necessity imposed by the Constitution. We find no such necessity in this case.

The judgment is reversed and the record remitted to the court below with direction to impose sentence according to law.

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Mold in Tomato Products.

One of the most important of the many food products preserved by commercial canning is the succulent tomato. With the possible exception of canned corn it is perhaps the most important of all canned fruits and vegetables. For that reason its legal control is of more than passing interest.

During the past few years the Bureau of Chemistry, in enforcing the terms of the Food and Drugs Act, have successfully urged legal condemnations of many lots of tomato products, the legal testimony in connection therewith being limited to microscopical examination.

Late in April of this year the Government lost an important condemnation case in the Federal Court in Brooklyn, New York, the expert for the defendant, Professor R. O. Brooks, testifying that the so-called Howard method of microscopical investigation was defective in several particulars, to wit, that this method did not bear in mind the chemical makeup of tomato catsup (98 per cent liquid to 2 per cent insoluble, visible solids); did not observe precautions for getting a representative drop, on which whole shipments are to be judged; did not evenly distribute the drop on a slide; only examined one-eighth of the area of the drop and that across the equatorial zone, where insoluble solids and imbedded mold would be thickest; and did not consider the ratio of liquid to insoluble solids in selecting the microscopic views.

More recently, from July 10 to 15, in the New York City Federal Court the Bureau of Chemistry brought an action against 1,500 cases of tomato pulp alleging decomposition and again relying upon the

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Howard method. In this case the Government was successful.

It is a well-known fact that for years the government has been investigating tomato products. Inspection of certain factories where such products were packed revealed that very substantial quantities of rotten or partially rotten tomatoes were being used. Although the rotten material was very offensive in the raw material it could not be detected by the senses in the finished product. This made it imperative to find a method by which the presence of the rotten material could be detected. Dr. Howard, Chief of the Government's microscopical laboratory at Washington, has spent several years in studying this matter, both in this country and in Europe, and the result of his work is the adoption by the Government of the Howard method of ascertaining the presence of rotten material in the finished product.

It has been found upon examination of a large number of tomato products and tomato factories that it is entirely practicable for the manufacturers to keep the mold count down to 25 per cent or less, the yeast and spore count to 25 or less, per 1/60 cubic millimeter, and the bacteria per cubic centimeter to 25 millions or less. However, proceedings under the Food and Drugs Act have not been recommended by the Bureau of Chemistry unless the product was found to contain yeasts and spores or bacteria or mold filaments in excess of the following numbers: Yeast and spores per 1/60 cubic millimeter 125; bacteria per cubic centimeter 100,000,000; mold filaments in 66% of the microscopic fields.

Dr. Howard's investigations and experiments

brought to light the fact that where the mold count was high a substantial quantity of rotten material had been used. The government has tried his method time and again and has found it to be satisfactory.

It was discovered recently, in the cases tried in New York, that the rot had been caused by molds. Examination showed the mold count to range from 72 to 92 per cent of the part examined. This indicated that from 10 to 20 per cent of rotten material had been used in the manufacture of the product. That Dr. Howard had properly correlated the high microscopic count of molds with the presence of a substantial amount of rotten tomatoes was very clearly brought out in the testimony in these cases. It was further shown that the tolerances established by the Bureau of Chemistry made every allowance which could be reasonably expected of the trade. Testimony was also given that the producers of high class tomato products were using the Howard method in buying their stocks and it was a fact that no purchases were made unless the count was considerably lower than the tolerance which had been established by the Bureau of Chemistry. After a four-day trial, during which the Government relied wholly upon this method, the jury rendered a verdict in favor of the Government.

The Government holds that while strictest conservation is necessary and that it is the policy of the Government at the present time to do everything that is necessary to conserve the food supply of the Nation, it will not tolerate the packing and selling of rotten material, and therefore, wherever it is found that decomposed material has been used in the manufacture of a product the Government will have such products destroyed.

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NEW YORK CITY

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Chemicals in Confectionery.

The National Confectioners' Association advises its members that benzoate of soda should not be added to confectionery. When fruits containing benzoate of soda are used in confectionery, such fruits should not contain more than one-tenth of one per cent. by total volume, of benzoate of soda.

Confectionery containing benzoate of soda, either in added form or when transmitted to the confectionery by the use in its manufacture of fruits and other materials, should not be sold in Indiana, New Hampshire, North Carolina, North Dakota, Pennsylvania, and Wisconsin.

The same association, in discussing the use of sulphur dioxide, recently sent its members a bulletin in which it was pointed out that while the use of sulphur dioxide and sodium bisulphite was entirely proper in connection with preservation of fruits and as a native ingredient of molasses, the direct addition of those products to confectionery was held by the Executive Committee of the National Confectioners' Association unwise and detrimental to the best interests of the confectionery industry. All members are therefore urged to make no use of these products, quite irrespective of whether or not such use would conflict with state laws.

Price Differentials Legal in New York.

The law which was passed by the New York state legislature of 1918, authorizing the State Food Commission to fix differentials in the handling of food products, and which became effective by the signature of Governor Charles S. Whitman, April 30, 1918, will be the subject of early action by the Commission. Director Cyrus Miller of the Bureau of Transportation and Distribution has recently made an exhaustive investigation of many hundreds of complaints alleging excessive prices for ordinary food commodities. The law authorizing the fixing of differentials is a new departure in food legislation, and there are few precedents.

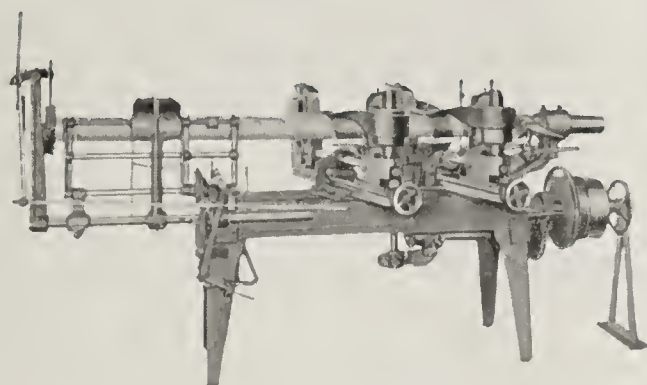
Increased Butter and Cheese Margins Authorized.

Larger maximum margins on small sales of cold storage butter and on American or cheddar cheese were authorized by the Food Administration on July 16 to take care of the small wholesale dealer.

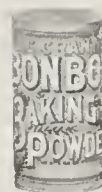
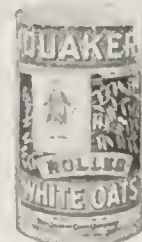
According to the amended rules on cold storage butter, the maximum margin that may be taken on carlots is 1 cent a pound; on sales of 7,000 pounds or more, 1½ cents; on quantities between 3,500 and 7,000 pounds, 2 cents a pound; 700 to 3,500 pounds, 2½ cents a pound; 100 to 700 pounds, 3 cents a pound, and on sales less than 100 pounds 3¾ cents a pound if conditions justify it.

Similar changes have been made in the cheese margins. As the rules now stand, a dealer may, if conditions warrant, add the following margins over his cost: ¾ cent a pound on carlot sales; 1¼ cents on sales of 7,000 pounds up to a carload; 1¾ cents on 4,000 to 7,000-pound sales; 2½ cents on sales of 1,000 to 4,000 pounds; 3 cents on sales between 100 and 1,000 pounds, and 3½ cents on sales less than 100 pounds.

These are the maximum margins that may be added. They are made wide to provide for exceptional cases where the cost of doing business is high. A dealer cannot charge the limit given here, if by doing so he makes an excessive profit.



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Penalties Under Food Control Act

For violations of the U. S. Food Administration's regulations a number of licensees were penalized during the past few weeks. Among them were the following:

Chas. Pedersen of Kimball, Neb., had his place of business closed for violating the substitute rule.

The Herstein Seed Company of Clayton, New Mexico, Estancia, New Mexico, and Greeley, Colo., had their licenses revoked for unfair practices in regard to the purchase and distribution of pinto beans.

David Gartzman, a baker, at 215 Vine street, Philadelphia, Pa., has been deprived of his license until September 13 for having an excessive amount of flour on hand, improper storage of flour and the insufficient use of substitutes.

The North Adams Flour & Grain Co. of Adams, Mass., had their license revoked until September 15 for selling flour without a proper amount of substitutes.

The Butler Coal & Grain Co. of Adams, Mass., lost its license for one month, effective July 15, for selling flour in too great quantities and with insufficient substitutes.

Krall Brothers of Carnegie, Pa., lost their license for one month, effective July 15, for selling flour with insufficient substitutes, having more than a thirty days' supply on hand, failing to make reports and failing to appear at hearing.

J. A. Buzzell, 32 Almont Ave., Worcester, Mass., had his license revoked for three months beginning with July 15, for having unjustifiably rejected a carload of potatoes.

Hirasch Brothers of Chicago, Ill., had their license revoked for 60 days and were given the option of contributing \$500 to the Red Cross or a further revocation of their license, for having sold rice flour and dried fruits at excess profits.

King & Hearn, hay dealers of Kinston, N. C., had their license revoked for having unreasonably rejected a shipment of hay.

John Wonsch, 26 West Simpson street, Jacob Krieger, 925 Mallory avenue, and John Schneider, 928 Mallory avenue, all of Portland, Oregon, were fined \$50 each for hoarding flour.

R. Cavallaro & Bros., 61-67 Minor street, New Haven, Conn., were forced to suspend business for ten days for doing a wholesale and retail business without proper authorization and for violation of flour and sugar rules.

Dominic Ellis of Bever, Mo., had his place of business closed for 30 days for operating without a license.

The Gentile Flour & Products Co., 158 Salem street, Boston, Mass., had its wheat flour license revoked for having sold flour without sufficient substitutes and for excess profits. He was also advised to refund excess profits as far as possible and to donate remaining excess profits to the Italian War Fund.

The Chelsea Model Bakery, 145 Arling street, Chelsea, Mass., had their license revoked for two weeks for baking bread with an insufficient amount of substitutes.

Samuel Eckstein of 449 East 123rd street, New York City, was allowed to contribute \$10,000 to the Red Cross for profiteering and for violating the substitute rule.

Page & Shaw, one of the leading confectioners of the country, were forced to close their New York factory and their five New York stores for one week, and to post signs stating that they had been closed for violating the Food Administration rulings, for having hoarded sugar and having used it in excessive quantities. They were also required to turn over to the Government all supplies of sugar above those needed to meet their requirements for thirty days, which amounted to about 31,000 pounds.

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Packer and Manufacturer
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BRAND

**Canned Foods,
Jellies, Preserves,
Plum Pudding,
Sauces, Table Delicacies,
and**

**PRIDE OF THE FARM
Tomato Catsup**

**Bridgeton, N. J.
and 331 Spring St., New York**

Rumford
THE WHOLESOME
BAKING POWDER

Worthy of the highest commendation as a healthful, efficient and economical leavening agent.

The acid ingredient in Rumford is the genuine Prof. Horsford's phosphate in its improved form. It restores phosphatic elements equivalent to those which fine wheat flour loses in the milling.

A Perfect Baking Powder.

F.70 4.17

S. Wiedermann of San Antonio, Texas, lost his privilege to deal in foodstuffs for violation of the Food Administration rules and carrying on a wholesale food business without a license; also for selling at excessive prices to the government.

Lorenzo Balsmo of Silver Lake, New Jersey, a manufacturer of spaghetti, had his license revoked until September 1 for exceeding his allotment for flour and ignoring warnings of the Food Administration.

The Palermo Baking Company of Rochester, N. Y., was allowed to contribute \$250 to the Red Cross for violating the substitute rules.

The Neosho Grocery Company of St. Louis, Mo., was allowed to contribute \$600 to the Red Cross for violating the Food Administration regulations.

J. A. Rawls, a wholesale and retail grocer of Henderson, Ky., was deprived of his license for two weeks and allowed to contribute \$1,000 to the Red Cross for profiteering and for failing to keep his books in shape to show accurate transactions.

The Union Grain Company of Fort Worth, Texas, had their license revoked because they failed to make adjustment, in accordance with directions of the Texas Federal Food Administrator, with the Kemper Mill Elevator Company for four cars of corn handled by the Kemper Mill for the Union Company.

The Consolidated Sugar Company of Brooklyn, New York, were compelled to suspend business for four days for having an excess supply of sugar on hand amounting to approximately 32,000 pounds, and the sugar was held at the disposal of the Food Administration.

Throumoulos Brothers of Biddeford, Me., fruit and confectionery dealers, have been forced to discontinue handling sugar for the remainder of the year, for having sold sugar in larger quantities than permissible, including as much as 100 pounds to one family.

The Red Wing Milling Co. of Red Wing, Minn., was forced to repurchase at sale price all unused rye flour it had sold in the two counties mentioned below, except in cases where purchasers wished to retain it, for having violated the food regulations, and the Ruehlmann Flour Company of Cincinnati, Ohio, handling white rye flour on a commission basis for the Red Wing Co. was forced to refund all commissions on sales they had made, for having sold it in compulsory combinations with wheat flour in Kenton and Campbell Counties, Kentucky.

The Shepard Company of Providence, R. I., had their baking license revoked for an unlimited period for having used more flour and sugar than the quantities permitted, and for having turned in false reports.

Medical Director F. P. Nash, U. S. Navy, and his wife, Caroline R. Nash, were fined \$1,000 and Mr. Nash was forced to resign, for having hoarded foodstuffs in large amounts—more than could possibly have been needed for their household consumption within the next year.

J. Raia & Company, of 341 Rumney Road, Revere, Mass., had their license suspended for one month effective August 1, for having failed to accept and unload a quantity of fresh fruit and vegetables.

David Garber, a wholesale wheat and flour dealer of 1411 Main Street, Hartford, Conn., was deprived of his license for one week for having sold flour without the proper amount of substitutes.

The Horlick Malted Milk Company contributed 9,900 dozen cases of one-pound bottles of its product, representing in value \$50,000, half to go to the Quartermaster Department of the Army and half to the Bureau of Medicine and Surgery of the Navy, for having had on hand more flour than was permitted, and they were obliged to surrender the surplus.

J. J. Zeph's place of business was closed four days and he was obliged to contribute \$100 to the Red Cross; Lorenzo Daleo had his place closed for two weeks; Fred Conte, and Philip Shoemaker were closed for three days; Friend Zondler and J. J. Pipott were both prohibited from making any products except bread and rolls for two weeks; Mrs. Loretto Barnett had her place closed until September 1; and J. J. Cohen agreed to pay \$25 to the Red Cross. All of the above are Bakers in Kansas City, Mo., and the penalties imposed were for failing to use the required amount of substitutes in bakery products and became effective August 5. Nine other bakers in this city were put on probation.

The United Cash Store of Marshville, North Carolina, have been prohibited from buying any licensed food commodities for six months, effective August 5, for having sold sugar in twenty-five pound lots to individual custo-

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Vacuum evaporating has many distinct advantages over the old open kettle. Many of the fresh flavors and rich aromas are retained as well as the much desired live colors—and with all one Swenson single effect operating even on exhaust steam will do the work of several open kettles thereby saving in space and fuel and enormously increasing Profits—which after all is the desired result.

Swenson Evaporators have for many years been America's Standard in the "boiling down," or the production, of many foods. A few of the products handled are Sugar, Milk Sugar, Tomato Pulp, Malt Extract, Beef Extracts, Pepsin, Gelatin, Sorghum Syrup, Salt, etc.

Our catalog explaining vacuum evaporators, will be sent on request. It also contains many blue prints, tables and data valuable to colleges and laboratories, as well as the manufacturer and engineer.



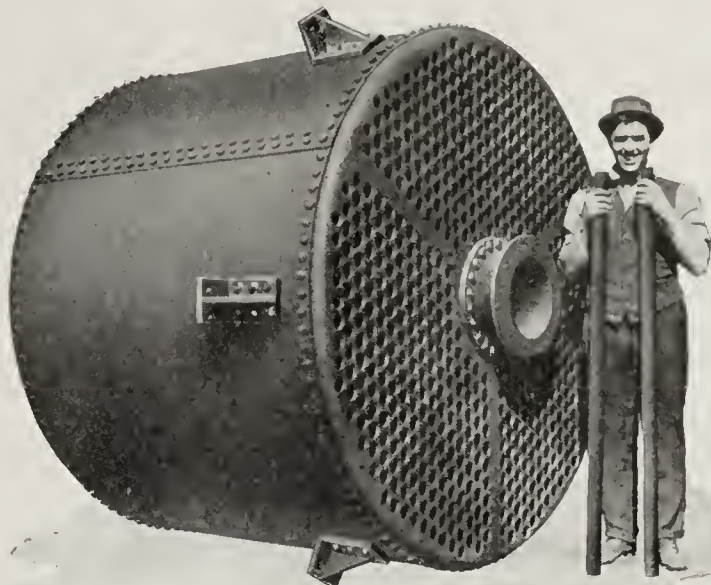
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At this time we particularly recommend the production of sugar from Milk Whey.



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mers without ascertaining whether the sugar was to be used in canning or how much customers already had on hand, and also for selling flour in excessive quantities and without substitutes.

Junker Co., wholesale grocers of Chicago, were allowed to contribute \$1,000 to the Red Cross for having sold rice flour and edible corn starch at excessive profits.

Podolsky Bros., wholesale grocers of Chicago, were allowed to contribute \$1,000 to the Red Cross for having made inaccurate reports and for having sold canned tomatoes, canned corn and canned peas at excessive profits.

Hilker & Bletsch, bakers' supply house in Chicago, were allowed to contribute \$2,000 to the Red Cross for having sold edible corn starch and rice flour at excessive profits.

John F. Lalla & Co., wholesale grocers in Chicago, were allowed to contribute \$1,500 to the Red Cross for having made incorrect reports, failure to keep records as required, and also for having sold canned goods, dried fruits, rice and other licensed commodities at excess profits.

See & Co., wholesale grocers in Chicago, were allowed to contribute \$1,500 to the Red Cross for having sold goods at excess profits and failing to keep records properly so that reports could not be verified.

A. E. Gilberg & Co., wholesale grocers in Chicago, were allowed to contribute \$250 to the Red Cross for having made sales at excessive profits.

The Greeley Square Hotel Company of New York, which controls the Hotel McAlpin and a number of other large hotels and restaurants in the metropolis, agreed to shut down for three months the confectionery department which it runs in connection with its hotel and restaurant business, and to contribute \$10,000 to the Red Cross for having excessive quantities of brown sugar—170,000 pounds—on hand.

The R. J. Meguiar Company and the Meguiar Company, both tomato packing concerns in Ohio, had their licenses revoked for having made grave and frequent misrepresentations to the Food Administration. They will, however, be allowed to continue to operate long enough to fill existing contracts, and the Federal Food Administra-

tor for Ohio will supervise the limited operation of both companies.

The Industrial Transportation Company of New York City had their license to deal in foodstuffs revoked for having failed to file reports and for disregarding summons to appear at hearings.

R. W. Shropshire, a retail merchant of Rockingham County, North Carolina, had his license revoked for violating the Food Administration rules.

Stocks of Cereal Products on Hand, July 1, 1918.

The commercial stocks of wheat reported to the United States Department of Agriculture in a food survey for July 1, 1918, amounted to 9,237,059 bushels. This refers to stocks actually reported and does not represent an estimate of the total commercial stocks of the country. Neither do the figures include stocks on farms on July 1, for which no data are available. According to the statement just issued by the department these stocks were held by 7,989 firms out of a total of 12,019 submitting reports (the firms consisting of elevators, warehouses, grain mills and wholesale grain dealers), and were 28.8 per cent of the stocks held by the same firms on July 1, 1917.

The commercial visible supply figures, as published by the Chicago Board of Trade, show only 785,000 bushels of wheat against 14,209,000 a year ago, and the Bradstreet figures for June 30 show 2,465,000 bushels as against 19,901,000 bushels for the same date in 1917. The Board of Trade figures cover commercial holdings in about a score of large cities; the Bradstreet figures cover these holdings and those in certain smaller markets, in all about 50. The food survey figures cover practically all commercial hold-

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WITH OFFICES IN ALL LARGE CITIES

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MADE OF NUTS AND MILK
FREE FROM ANIMAL FATS

THIS product is taxed and regulated the same as animal oleomargarine.

We oppose the former and positively favor the latter. We want this product sold on its merits for just exactly what it is. We refuse to sell moonshiners. This product is sold only in one, two and five pound cartons. Our business has grown rapidly on new, progressive lines.

The Nucoa Butter Company

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Sales Department, 2283 Woolworth Building, New York

ings throughout the country. These figures indicate that the stocks of wheat in the primary markets were largely depleted and that the commercial holdings were confined for the most part to the smaller interior points. The comparative figures thus shown for the commercial stocks of wheat this year and last should be considered in connection with the stocks still remaining on farms. The estimated amount of wheat on farms on July 1, as presented in the monthly crop reports of the department, was 8,283,000 bushels, as against 15,611,000 bushels on July 1, a year ago.

The commercial stocks of other cereals on July 1, according to the department statement, were as follows: Corn, 27,371,441 bushels; oats, 40,598,653 bushels; barley, 6,551,653 bushels; and rye, 1,658,189 bushels. These stocks represent the following percentages of the corresponding stocks of July 1, 1917: Corn, 156.1 per cent; oats, 101.9 per cent; barley, 136 per cent, and rye, 127.9 per cent.

The commercial stocks of flour and meal, as reported for the survey, were: Wheat flour, white, 2,392,943 barrels; whole wheat and graham flour, 199,466 barrels; barley flour, 426,441 barrels; rye flour, 451,208 barrels; corn flour, 43,559,833 pounds; corn meal, 93,638,778 pounds; buckwheat flour, 2,161,585 pounds; and mixed flour, 8,393,594 pounds. These stocks represent the following percentages of the stocks on hand a year ago: Wheat flour, white, 48.9 per cent; whole wheat and graham flour, 259.1 per cent; rye flour, 344.8 per cent; corn meal, 216.5 per cent; buckwheat flour, 72.6 per cent; and mixed flour, 200.8 per cent. The stocks of barley flour and corn flour on July 1, 1917, were so small as to make unnecessary any comparison between them and the present stocks on a percentage basis.

The following commodities were reported by wholesale grocers, with the results indicated: Beans, 3,768,022 bushels; rice, 32,349,005 pounds; rolled oats, 40,177,743 pounds; canned salmon, 59,623,859 pounds; canned tomatoes, 59,657,762 pounds; canned corn, 30,706,139 pounds; and sugar, 175,925,924 pounds. The stocks of beans, rolled oats and canned salmon showed a substantial increase, the present holdings representing the following percentages of those on hand a year ago: Beans, 173.1 per cent; rolled oats, 133.6 per cent, and canned salmon, 117.5 per cent. The stocks of rice, sugar and canned corn, on the other hand, showed a substantial decrease, being 58.9 per cent, 77.6 per cent and 87.9 per cent, respectively, of the amounts reported for July 1, 1917. The stocks of canned tomatoes were 102.8 per cent of those reported a year ago.

Returns from wholesale grocers and condensaries reporting holdings of condensed milk on July 1, 1918, indicated that the stocks of condensed milk, amounting to 30,886,297 pounds, were 12.1 per cent larger than those last year and that the stocks of evaporated milk, amounting to 82,511,008 pounds, were 36 per cent larger than on the corresponding date a year ago.

Federal Live Stock Reporting Service Transferred to Chicago.

The headquarters of the live stock loading-report service of the Bureau of Markets has been transferred from Washington to Chicago. The transfer is expected not only to develop greater efficiency in the operation of the loading-report service, but also to facilitate the preparation of the telegraphic reports on the estimated receipts at Chicago. These are a part

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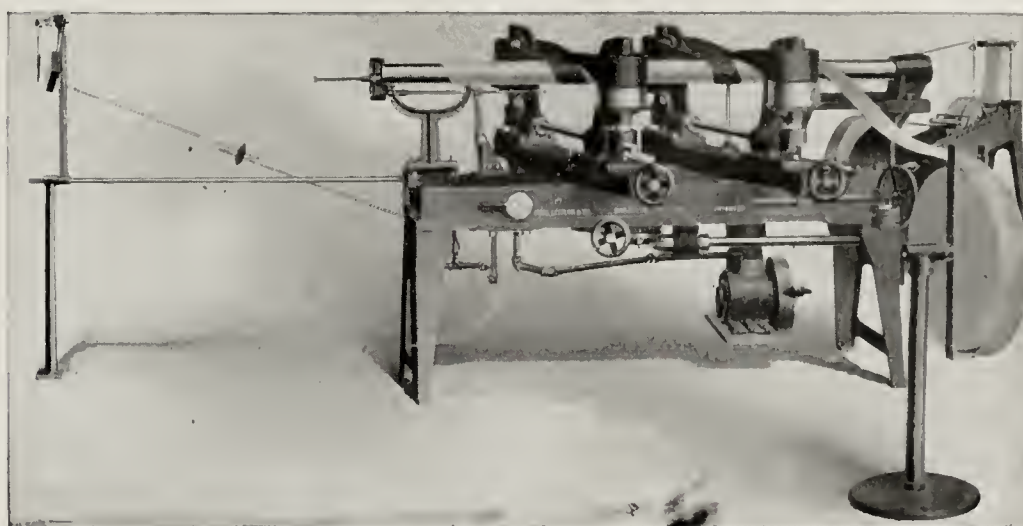
CATALOGUES ON REQUEST

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Clymer Street

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BROOKLYN, N. Y.



of the market report service on live stock at that market which the Bureau has been furnishing since June 1.

Important Changes in Food Administration Personnel.

Dr. W. R. Dodson, Dean of the College of Agriculture of the University of Louisiana, and E. S. Brigham, Commissioner of Dairying of Vermont, are new members of the Food Administration staff in Washington. Dr. Dodson, who has already taken up his duties, has charge of problems of interest to both the Food Administration and the Department of Agriculture. Mr. Brigham, who will assume his duties within a few days, will head the Butter and Cheese Section.

Dr. Dodson, one of the leading agriculturists of the South, has been loaned by the University of Louisiana. Last spring he was selected by the Department of Agriculture to conduct the special production campaign in the Southern states.

Mr. Brigham is one of the leading dairymen of New England, a member of the New England Regional Milk Commission and president of the New England War Council. Mr. Brigham will still retain his office as Commissioner of Dairying for Vermont, the Governor having made it possible for him to divide his time and services between the State and the Food Administration.

Dean H. L. Russell of the College of Agriculture of the University of Wisconsin, who has rendered exceptional service to the Food Administration in the capacities which Dr. Dodson and Mr. Brigham now

assume, has been recalled to Wisconsin by pressing duties at the University.

Hughes Resigns From the Food Administration.

In order to devote his entire time to the interests of the Association, Mr. Walter C. Hughes, secretary of the National Confectioners' Association, has resigned his post as a member of the U. S. Food Administration. Secretary Hughes will continue to assist the Food Administration and other departments in Washington in every way possible.

Rhondda's Successor Named.

Cable advices from London of July 9 bring news that the post of Food Controller in the United Kingdom, left vacant by the death on July 3 of Viscount Rhondda, has been filled by the appointment of J. R. Clynes, Member of Parliament from Manchester. Mr. Clynes is a member of the Labor Party and was elected to the House of Commons in 1906. He is 49 years old.

Commissioner Woodward Resigns.

The Commissioners of the District of Columbia beg to announce the resignation of Dr. William C. Woodward as Health Officer of the District of Columbia, and the appointment of Dr. William C. Fowler to that office; the change to be effective as of August 1, 1918. Dr. Woodward has been appointed Commissioner of Health, of Boston, Massachusetts.

Butter Standards: A Symposium

Because of the very general interest in the matter of definitions and standards for butter, this office recently sent a questionnaire to a number of men whose opinions in this regard are worthy of consideration. Owing perhaps to its being vacation time, but few replies were received. They are reprinted below.—Editor's Note.

Questionnaire as sent out from this office:

1. Should a lawful standard require a single fat minimum, a single moisture maximum, or double limits of fat and moisture? Why?
2. Should a lawful standard fix the limits for salt and curd? Why?
3. Should a distinction be made between the limits for salted and unsalted butter?
4. Are you in favor of a definition which requires all creamery butter to be pasteurized? Why?
5. Do you believe the neutralization of cream for butter making is an economic necessity? Why?
6. Should neutralized butter be sold under a distinctive label? Why? If not, do you consider that butter made from whole milk or sweet cream butter should have a distinctive label, or should it be regarded as the same product as neutralized butter?
7. What label do you suggest as fair and descriptive for either of these classes of product?

Reply of Mr. G. L. McKay:

Mr. R. G. Gould,
American Food Journal,
15 S. Market St., Chicago, Ill.

Dear Sir:

In answer to your letter of July 15 would say that my views are fully expressed in the brief I submitted to the Committee on Definitions and Standards. Evidently, you must have a copy of this brief as you have criticised it in one of your recent editions; if not, I will be pleased to send you one.

Yours very sincerely,

G. L. MCKAY,
Secretary American Association Creamery Butter
Manufacturers.
Chicago, Ill., July 23, 1918.

Reply of Commissioner W. B. Barney:

Mr. Robt. G. Gould,
Editor of the American Food Journal:
Chicago, Ill.

Dear Sir:

Replying to your letter of July 15 relative to a butterfat standard, will say that we do not feel that we care to answer this questionnaire that you have sent us, as the questions are not quite clear to us.

Although we are in favor of a single butterfat standard and also feel there should be a distinction between salted and unsalted butter, we contend that salted butter should have a butterfat standard of 80 per cent and unsalted butter should have a butterfat standard of 82½ per cent.

We also think that the pasteurization of all milk and cream is highly desirable. This department is co-operating in every respect with the dairy school at Ames.

Yours very truly,

W. B. BARNEY.
Des Moines, Iowa, July 18, 1918.

Reply of Professor J. H. Frandsen:

1. Should a lawful standard require a single fat minimum, a single moisture maximum, or double limits of fat and moisture? Why?

I favor 80 per cent salted butter, 82 per cent unsalted butter. Fat, which is the most important constituent in butter, should be mentioned in standard. Favor higher standard for unsalted butter to prevent chance to load with water or curd.

2. Should a lawful standard fix the limits for salt and curd? Why?

Do not believe it necessary to have legal limits for salt and curd as fat standard will automatically fix this.

3. Should a distinction be made between the limits for salted and unsalted butter?

Yes. For reasons mentioned in No. 1.

4. Are you in favor of a definition which requires all creamery butter to be pasteurized? Why?

Yes, by all means. To prevent any possibility of transmission of disease germs.

5. Do you believe the neutralization of cream for butter making is an economic necessity? Why?

Yes, under conditions as they maintain in a large part of the country at this time. Food Administration tells us of shortage of valuable food material, such as fat. Butter could not be made satisfactorily in the sparsely settled sections of the plains country without its use.

6. Should neutralized butter be sold under a distinctive label? Why? If not, do you consider that butter made from whole milk or sweet cream butter should have a distinctive label, or should it be regarded as the same product as neutralized butter?

No test applied so far shows difference in food value and inasmuch as more than half of our butter is made with neutralizer, do not believe it should be sold under distinctive label. Would consider it perfectly proper for "whole milk or sweet cream butter" to bear distinctive title.

7. What label do you suggest as fair and descriptive for either of these classes of product?

Have not given this matter of labeling consideration.

J. H. FRANDSEN,
Professor Dairy Husbandry, University of Nebraska.
Lincoln, Neb., July 18, 1918.

Reply of Commissioner James Sorenson:

1. Should a lawful standard require a single fat minimum, a single moisture maximum, or double limits of fat and moisture? Why?

A single fat minimum, because fat is the valuable ingredient of butter.

2. Should a lawful standard fix the limits for salt and curd? Why?

No. These will take care of themselves with a minimum fat standard.

3. Should a distinction be made between the limits for salted and unsalted butter?

Salted 80 per cent, unsalted 82½ per cent.

4. Are you in favor of a definition which requires all creamery butter to be pasteurized? Why?

Yes. It would insure a more uniform product and would also insure the healthfulness of the product.

5. Do you believe the neutralization of cream for butter making is an economic necessity? Why?



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WITH a large modern experimental laboratory at its disposal, with first-hand knowledge of the food situation, with special facilities for research work, our Domestic Science Department is a valuable help to the Domestic Science Teacher or Extension Worker, as well as to every housewife in America.

Our facilities in this respect are gladly placed at your disposal.

Miss Eleanor Lee Wright, in charge of our Domestic Science Department, gives her personal attention to all communications and requests.

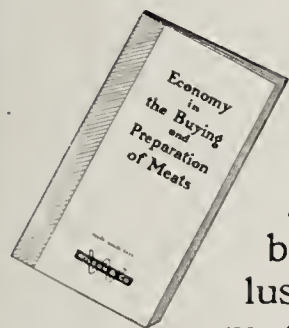
Under her direction we issue special weekly bulletins, special recipes, and other information of unusual interest. For the domestic science teacher or extension worker we also provide slides and motion picture films illustrating the preparation of special recipes. These we take pleasure in lending on request.

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"Economy in the Buying and Preparation of Meats" is a complete textbook on this important subject. It illustrates the different cuts of beef, pork, mutton, etc., in their natural colors and really teaches how to select meats as well as how to cook them most economically. We will mail a copy to any address on receipt of ten cents in stamps.

Use the coupon to secure any one or all of the five special pamphlets, which we send without charge.

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Send me the pamphlets marked with an "X"

- ☐ **Six Wartime Recipes**—half a dozen appetizing dishes that are inexpensive.
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- ☐ **Lesson on Oleomargarine**—Valuable bulletin for domestic science teachers.
- ☐ **Common-Sense Kitchen Efficiency**—How to run the "office" of the home.
- ☐ **"It Protects Your Table"**—Something about our own big kitchen.
- ☐ I enclose 10c in stamps for "Economy in the Buying and Preparation of Meats."

Name _____

Address _____

No. Good cream need not be neutralized.

6. Should neutralized butter be sold under a distinctive label? Why? If not, do you consider that butter made from whole milk or sweet cream butter should have a distinctive label, or should it be regarded as the same product as neutralized butter?

Neutralized butter should be labeled so the consumer will know it when he buys it. This is only fair to good butter.

7. What label do you suggest as fair and descriptive for either of these classes of product?

Neutralized butter should be labeled, "Renovated Cream Butter."

JAMES SORENSON,

Dairy and Food Commissioner, Minnesota.
St. Paul, Minn., July 21, 1918.

Reply of Professor Martin Mortensen:

1. Should a lawful standard require a single fat minimum, a single moisture maximum, or double limits of fat and moisture? Why?

A single fat minimum, because milk and cream are usually bought on the butterfat basis.

2. Should a lawful standard fix the limits for salt and curd? Why?

No. The value of the butter is based on its fat content.

3. Should a distinction be made between the limits for salted and unsalted butter?

I should prefer to have a difference in fat content between the two as unsalted butter is usually sold at a higher price. There are many arguments, however, in favor of having the same standard.

4. Are you in favor of a definition which requires all creamery butter to be pasteurized? Why?

Yes, because it will eliminate any possibility of spread of disease through such products.

5. Do you believe the neutralization of cream for butter making is an economic necessity? Why?

No. It is an economic disadvantage as neutralization prevents more or less improvement in quality and it prevents us from establishing a reputation for the American butter on the best markets.

6. Should neutralized butter be sold under a distinctive label? Why? If not, do you consider that butter made from whole milk or sweet cream butter should have a distinctive label, or should it be regarded as the same product as neutralized butter?

Yes. People should know what they are buying. There is no reason, however, for labeling butter made from cream which has not been so treated.

7. What label do you suggest as fair and descriptive for either of these classes of product?

Neutralized cream butter.

MARTIN MORTENSEN.

Ames, Iowa, August 10, 1918.

Reply of Mr. O. F. Hunziker:

R. G. Gould, Editor,

The American Food Journal,

15 S. Market St., Chicago, Ill.

Dear Sir:

Your letter of the 15th inst. and questionnaire are at hand, and contents carefully noted.

Your questionnaire covers the whole vast field of butter standards that is now under consideration by the Standard Committee, and my reply to same in a comprehensive manner would involve considerable time and space.

Inasmuch as this particular time is a very busy time for me, being out among our plants most of the time, I do not feel that I am in position to give this questionnaire the thought and labor which such answers as I would want to offer would require.

And inasmuch as I have covered these various points quite comprehensively by briefs and addresses which are filed with the proper authorities, and which have been published, I prefer to refer you to statements which I made which are now on record and which may be found as follows:

Address on Butter Standards before the Conference of Joint Committee appointed by the Bureau of Chemistry, June 12 and 13, 1917, Chicago.

Address on the Neutralization of Cream for Butter-making before the American Association of Creamery Butter Manufacturers, February 19, 1918, Chicago.

Talk before the Joint Committee on Standards on Neutralization and Butter Standards, June 24, 1918, Washington, D. C.

Permit me to express my appreciation of your courtesy in calling on me for the discussion of the subject in your Journal.

Very truly yours,

O. F. HUNZIKER,

Manager, Manufacturing Department, Blue Valley Creamery Co.

Chicago, Ill., July 19, 1918.

Reply of Commissioner George J. Weigle:

Mr. R. G. Gould, Editor,

The American Food Journal,

15 S. Market St., Chicago.

Dear Sir:

Replying to your letter of July 15 and the questionnaire enclosed, I am giving as briefly as possible my opinion on the questions as they were enumerated:

First: I am in favor of a single fat standard of eighty per cent minimum for butter. If a tolerance is permitted, then the standard should be above eighty per cent to the extent of the tolerance allowed. I do not believe it is necessary to fix a standard for a maximum of moisture when the percentage of fat is fixed. This is equally true of the percentage of salt and curd found in normally made butter. The percentage of water in butter made in any one factory or group of factories need not vary greatly over fourteen per cent. This allows a reasonable margin for the other ingredients, including salt, the percentage of which may be varied to suit the trade.

Second: The percentage of salt and curd permissible in butter should be regulated only when there is no standard for fat.

Third: There should be no distinction made between the so-called salted and unsalted butter in the percentage of fat present.

Fourth: The definition of creamery butter should be so worded as to include pasteurization. Butter made from pasteurized cream is a safer food and possesses better keeping qualities.

Fifth: I do not believe that, in Wisconsin, there is an economic necessity for the use of a neutralizer in cream.

Sixth: Butter made from cream to which a neutralizer has been added should be so labeled to correctly distinguish it from the product made from



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cream not so treated. It is an established fact that all butter made from sweet cream or from cream slightly acid because of normal development of the lactic acid, is far superior in quality to the product made from cream that must be neutralized before it is churned.

Seventh: Butter made from a good, clean, whole-

some cream should be labeled: "Pure Creamery Butter," and that product made from cream to which a neutralizer has been added before it is churned, should be labeled: "Neutralized Butter."

Very truly yours,

Madison, Wis.

GEO. J. WEIGLE.

July 19, 1918.

The American Grapefruit

THE adoption of the grapefruit in America as a valuable food accessory has spread with amazing rapidity, so that now it is possible to obtain this fruit in season in practically every remote village in the United States or Southern Canada. This wholesale distribution has necessitated an industry which is likely to exceed either the lemon or orange industries, if proper market conditions and disposal of wastes can be secured.

The present name (grapefruit) originated from the fact that the fruit commonly occurs on the trees in large clusters, somewhat resembling clusters of grapes. However, the term "Pomelo" has been applied and adopted by the U. S. Department of Agriculture, American Pomological Society, Florida State Horticultural Society and similar bodies. The English of Ceylon and India call it pomelow, a name probably derived from the Latin words "Pomun melo"—the melon apple—though it may have been corrupted from pompelmoes, the Dutch name first applied by Rumphius in 1750. The latter seems more probable since all incidents point to the Dutch East Indies, on the Island of Java, as the original home of the grapefruit. To the French and Germans it is known as pompelmouse and pompelmuse, respectively. The term shaddock has often been used as a synonym for grapefruit in honor of a certain British sea captain who is said to have introduced the fruit into the West Indies from Java early in the eighteenth century.

It is interesting to note that in Java, which is the acknowledged home of the grapefruit, there are two varieties. One is small and bitter, though edible, and grows in enormous clusters on trees from 10 to 20 feet high situated in the lower coastal regions of the island. The other variety is much larger (often from 10 to 20 pounds per fruit), intensely bitter, with a dark yellow to red pulp. It grows at much higher altitudes, abundantly on the Bandong plateau, and is known there as the non-edible variety. The bitter principle in both varieties is identical, which would lead to their classification as sub-varieties under *Citrus decumana*. This non-edible fruit, because of its prolific growth and large flowers, was for a number of years a source of "neroli-oil" or oil of bitter orange to the inhabitants of Europe and Asia. Both varieties are being extensively cultivated in Southern Europe and Asia at present for food and commercial products.

It is likely that the term shaddock applies more specifically to this just mentioned larger and "non-edible" variety. The smaller variety is the one that is best known, though it is not unlikely that the larger variety has also been introduced into the West Indies as well as the United States and Mexico. This large, non-edible fruit may be placed on the market in a few years as a hybrid of either orange or lime, since several of the unpalatable varieties, after undergoing

hybridization with other citrus species, have been transformed into very agreeable fruit, commonly known as grapefruit.

Just at what particular date the grapefruit was introduced into this country is not known. While the state of Florida claims the first fruit, it must not be forgotten that the fruit has flourished in Mexico for decades past. Mexico has proved to be better suited for the production of larger and more luscious grapefruit, and evidences exist of citrus orchards of extremely early date. However, it is not improbable that the Spaniards first introduced the fruit into Mexico or Central America.

While Florida and California practically comprise the entire source of grapefruit in the United States, it is astonishing to learn that an amount equal to one-half of the United States crop is imported for our consumption. According to Vaile, the following shipments of grapefruit have been determined: Florida, 1915, 8,000 carloads; California, 1915, 250 carloads; Porto Rico, 1913, 500 carloads; Cuba, 1912, 250 carloads. The present shipments run considerably above these values, since hundreds of acres of five-year-old orchards are coming into production each year, and a tree, once producing, continues to produce abundantly for several years if not incapacitated by frost. Mexico is liable to become a contending factor in the grapefruit market in a very short time. The Mexicans have found to their satisfaction that the grapefruit industry can take the place of the long-tried orange and lemon industry. These latter Mexican-grown fruits cannot compete with the better varieties of oranges and lemons grown in this country, while the grapefruit seems to thrive prolifically in the higher and warmer altitudes of Central Mexico, the climatic conditions in Mexico comparing favorably with those on the Island of Java. All the energies of the citrus growers in Mexico are now being bent towards a successful prosecution of a grapefruit commerce. According to Hume, the first shipment of grapefruit from the state of Florida occurred some time during the years 1880 to 1885 and were sold in New York and Philadelphia, netting the shippers 50 cents per barrel.

The fact that a successful season in the citrus industry depends upon favorable weather conditions and orchards free from certain pathological plague, indicates that citrus by-products are sure to become an important factor. In the sorting and grading of the thousands of tons of grapefruit, representing a season's crop, many tons of culls are allowed to rot for the want of an economical disposal. Certain of the producing companies are seriously contemplating the isolation of certain of the by-products, and one or two companies have engaged in extractions on a minor scale. With a proper knowledge of the important constituents their commercial production would become

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profitable and the trades would be supplied with the raw materials which they demand. It is only within the last 15 years or so that the pomelo has been regarded as a commercial fruit.

Numerous varieties of grapefruit have resulted from the efforts of citrus growers and horticulturists. As previously intimated, hybridization has played an important role in this development. Hybrids of grapefruit with the orange, tangerine and grapefruit from various countries exist. The chief aim apparently is to produce a fruit with a minimum of bitterness and few seeds. The *Marsh Seedless* is an example of a hybrid grapefruit with few seeds, though it retains the bitterness of the original grapefruit. This is extensively cultivated in California and Florida, and appears on the market in quantities. Since it ripens in California during May to July and in Florida during February to March, it acquires additional importance from a commercial standpoint. The *Duncan* is another variety possessing few seeds together with much bitterness. In fact, these are about the only varieties possessing a small quota of seeds. The average number of seeds in the other varieties is well above forty. The effort to remove or mask the bitterness is not so well rewarded. A few varieties have lost the bitterness, and at the same time they have lost all that characterized them as grapefruit. A fruit exhibited as grapefruit but without the "quinine" bitterness should no longer be looked up as a grapefruit. Pfeffer, DeVry, Blas, Hoffman, and others, as long ago as 1828-1870, found that the bitter glucoside existing in the "pompelmoes" from Java could be found in no other citrus fruit. Likewise, they found that neither hesperidin nor isohesperidin, glucosides common to certain other citrus fruits, could be found in "pompelmoes" (grapefruit). Truly, it may be expected that in some of the more divergent hybrids one may find a comingling of the glucosides characteristic of each parent stock. Whether or not this is true should be determined with utmost expertness in connection with the citrus culture, for *upon the glucosides depends the primary differentiations of the species*. They undoubtedly control the sugar content, flavor and possibly the color of the fruit through their reversible reactions. The acid content of the fruits (citrus), while varying in amount in each species, is attributed almost entirely

to the citric acid, so this is evidently not the basis of differentiation. Investigation has brought to light that during storage (i. e., the period between picking and placing in the hands of the consumer), especially when the period extended a couple of months into the spring, the juice suffered a marked change in flavor.

Recent analytical work done by Mr. Harper F. Zoller of the Kansas State Agricultural College, Manhattan, Kan., showed, in a discussion of the constituents of the American grapefruit as published in No. 5, Volume 10, of the *Journal of Industrial and Engineering Chemistry*, that in dealing with culls the peel contains recoverable amounts of essential oils (principally limonene, citral, pinene and alcohols), the glucoside naringin and pectin. Mr. Zoller points out several important properties of naringin and urges serious consideration of naringin as of real significance in the differentiation of *Citrus decumana* from other citrus species. He also found that grapefruit culls may be a factor in the production of a satisfactory grade of pectin for various purposes if correct methods are employed in its isolation. It is interesting to note that, as stated before, the citric acid, naringin and pectin content of grapefruit decrease during storage and the reducing sugars and sucrose increase. This is not easily explained as there is no loss of moisture to account for the large gain in sugars, and neither can the citric acid decrease be accounted for on the same assumption. The increase in sugar content might be explained by the soluble pectose material dialyzing through the sac walls but this could not explain the sucrose increase. The only way that both of these phenomena may be explained is by assuming continuing activity of the enzymes of the fruit during storage.

From the large sugar, pectin and glucoside content, as shown by analysis, it might be profitable to transform these into easily fermented sugars, and by fermentation of the entire grapefruit, after processing, obtain an economical yield of alcohol for commercial purposes. The citric acid present, if slightly increased by added mineral acids, would be serviceable for the hydrolysis of the glucoside and pectose material to available sugars. From one ton of grapefruit, considering the original sugar content alone, one would be able to obtain 10 to 15 gallons of proof spirit, calculations being based upon green weight of fruit.

Stock Yards Regulations.

General regulations under which stock yards will operate were recently signed by the President. They provide against extortionate or excessive charges for yardage and commission; require stock yards to maintain adequate facilities for handling live stock offered by stockmen, including labor, feed and water; and prohibit unfair dealing, combination or deceptive practices in buying and selling live stock. The circulating of misleading market information tending to affect prices is also covered by the regulations.

Stock yards, commission men, traders, order buyers and others handling stock in or in connection with stock yards, are required to secure licenses, in accordance with the President's proclamation of June 18, which was printed in the July issue of this JOURNAL, and to operate under the rules and regulations issued July 27, which will be administered by the Secretary of Agriculture through the Bureau of Markets. Country stock buyers and shippers who are not engaged in

the business of buying and selling at licensed stock yards are not subject to license.

The general regulations have been made after consultation with the Agricultural Advisory Committee, stockmen and trade interests. The Department of Agriculture sent out 3,000 copies of the preliminary draft of the regulations to interested persons and received suggestions from many sources before issuing the final regulations.

Stock yards must keep records, as required by the Secretary of Agriculture, of daily receipts, shipments and local disposition of live stock, make reports when required, and furnish true copies of all existing and proposed contracts with other establishments and changes therein relating to the handling of live stock in connection with such stock yards. The Chief of the Bureau of Markets has been designated by the Secretary of Agriculture to enforce the provisions of the regulations. It is contemplated that market supervisors will be stationed at the principal markets and in regional offices.

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The leading manufacturers in every branch of the food industry read THE AMERICAN FOOD JOURNAL. Not infinite in number, to be sure—there never can be many leaders—but great in influence.

Those whose official duty it is to enforce the many food laws of the Nation read THE AMERICAN FOOD JOURNAL. Here, again, the number is not great, but the influence is tremendous.

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Is this of interest to you?

The American Food Journal

15 South Market Street, Chicago

Notices of Judgment Under the Food and Drugs Act

(Continued from the preceding issue.)

5495. Adulteration of grapefruit.

Substantially the same as No. 5487.

5496. Adulteration of oranges.

Substantially the same as No. 5423.

5497. Adulteration and misbranding of olive oil.

A salad oil labeled "Finest Quality Olive Oil—Guaranteed Absolutely Pure—Net Contents full gallon," but shown to contain cottonseed oil and to be 6% less than a gallon, was held to be adulterated and misbranded. On April 14, 1917, no claimant having appeared, the product was destroyed.

5498. Adulteration and misbranding of sweetened Malaga wine type.

An imitation Malaga wine type, sweetened with glucose and artificially colored, labeled as above, was held to be adulterated and misbranded. On June 6, 1917, the defendant pled guilty and was fined \$25.

5499. Adulteration of butter grease.

Decomposed butter grease was held to be adulterated. On May 4, 1917, the defendants pled guilty and were fined \$25 and costs.

5500. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of ammonia 8%, nitrogen 6.5%, protein 41%, was not substantiated by analysis, which showed: ammonia 6.97%, nitrogen 5.74% and protein 35.9%. On May 9, 1917, the defendant pled guilty and was fined \$50 and costs.

5501. Adulteration of milk.

Added water was held to constitute adulteration. On June 4, 1917, the defendant pled nolo contendere and was fined \$25 and costs.

5502. Adulteration and misbranding of Garrod Spa lithia water.

Adulteration was alleged because of filth, and misbranding because of the false claim that the water was a cure for gout and rheumatism, and for the further reason that the amount of the contents was not conspicuously marked on the outside of the package. On May 16, 1917, the defendants pled guilty and were fined \$30 and costs.

5503. Adulteration and misbranding of clams.

Decomposed clams were held to be adulterated, and misbranded because the article was untruthfully labeled to contain pure animal substance. On April 23, 1917, no claimant having appeared, the product was destroyed.

5504. Adulteration and alleged misbranding of olive oil.

A product labeled olive oil was held to be adulterated and misbranded because it consisted largely of cottonseed oil and because of a shortage of 8 per cent. On April 17, 1917, claimant having admitted the allegations, the product was delivered to him under \$100 bond, in conformity with section 10 of the act.

5505. Adulteration and misbranding of "cider vinegar."

A product labeled as above but shown by analysis to contain distilled vinegar and dilute acetic acid was held to be adulterated and misbranded. On May 14, 1917, claimants having consented, the product was delivered to them under \$1,200 bond, in conformity with section 10 of the act.

5506. Adulteration and misbranding of "Baked Beans."

An article labeled as above but shown to have been cooked by another process was held to be misbranded; adulteration was alleged because of decomposition. On May 31, 1917, no claimant having appeared, the product was destroyed.

5507. Adulteration of walnuts.

Decomposition was held to constitute adulteration. On May 1, 1917, no claimant having appeared, the product was destroyed.

5508. Adulteration of walnut meats.

Substantially the same as No. 5507.

5509. Adulteration of oranges.

Frosted oranges which were decomposed were held to be adulterated. On May 3, 1917, claimant having consented, the product was sorted and the good portion released under bond to claimant and the balance destroyed.

5510. Misbranding of eggs.

Cold storage eggs, labeled "Fresh Eggs," were held to be misbranded. On June 11, 1917, the defendants pled nolo contendere and were fined \$150.

5511. Adulteration of oats.

The presence of burned and charred oats in a shipment of oats was held to constitute adulteration. On July 10, 1916, the product was delivered to claimants under bond, in conformity with section 10 of the act.

5512. Adulteration and misbranding of cottonseed meal.

An article labeled "Medium Grade Cotton Seed Meal," but consisting in part of cottonseed hulls and found to contain 6.90 per cent ammonia, whereas the amount was stated on the label to be 7.50 per cent, was held to be both adulterated and misbranded. On May 10, 1917, no claimant having appeared, the product was ordered to be truthfully labeled and sold at auction by the United States marshal.

5513. Adulteration of milk.

Added water was held to constitute adulteration. On May 4, 1917, the defendant pled guilty and was released under personal bond.

5514. Adulteration of milk.

Substantially the same as No. 5513, with the exception that the defendant was fined \$25.

5515. Adulteration of milk.

Milk to which had been added unsweetened condensed milk was held to be adulterated. On March 8, 1917, the defendant pled guilty and was fined \$25.

5516. Adulteration of milk.

Substantially the same as No. 5513, with the exception that the defendant was fined \$15.

5517. Adulteration of milk.

Substantially the same as No. 5513, with the exception that the defendant was fined \$25.

5518. Adulteration and misbranding of malt sprouts.

Adulteration and misbranding was alleged for the reason that barley chaff (or hulls), screenings and dust were shown to be present in a product invoiced as "Malt Sprouts." On May 31, 1917, claimants having admitted the allegations, the product was ordered to be released to them under \$500 bond, in conformity with section 10 of the act, and on condition that the article be properly labeled under proper supervision.

5519. Adulteration and misbranding of oil of wintergreen.

An article labeled "Oil of Wintergreen," but shown by chemical analysis to have been prepared in whole or in part from methyl salicylate, was held to be both adulterated and misbranded. On April 18, 1917, the defendant pled nolo contendere and was fined \$200 and costs.

5520. Adulteration and misbranding of "Oil Lemon."

Adulteration and misbranding was alleged because analysis showed that washed lemon oil had been substituted in whole or in part for oil lemon, and for the further reason that the article lacked citral. On May 3, 1917, the defendants pled guilty and were fined \$100.

5521. Adulteration and misbranding of macaroni.

Adulteration and misbranding was alleged because the article had been prepared from an inferior flour, but had been artificially colored so as to simulate the best grade of macaroni made from semolina, and which was so labeled as to give the impression that it was a foreign product. On February 17, 1917, the defendants were found guilty and were fined \$398.

5522. Adulteration of oysters.

Added water was held to constitute adulteration. On May 10, 1917, the defendant pled guilty and was fined \$50.

5523. Misbranding of "Owl Brand Cottonseed Meal."

Misbranding was alleged because the guaranteed analysis of "crude fat (ether extract), 7 per cent, protein 41 per cent" was not substantiated by analysis, which showed crude fat 6.08 per cent and protein 36.06 per cent. On March 27, 1917, the defendants pled guilty and were fined \$50 and costs.

5524. Misbranding of high protein tankage.

Misbranding was alleged because the guaranteed analysis of "protein 60 per cent" was not substantiated by analyses which showed, in two samples, protein 54.3 per cent and 48.94 per cent. On March 17, 1917, the defendants pled guilty and were fined \$200 and costs.

5525. Adulteration and misbranding of tomato conserve.

Adulteration was alleged because of decomposition and misbranding because of short weight. On April 2, 1917, the defendants pled guilty and were fined \$25.

THE AMERICAN FOOD JOURNAL



—with which was combined on May 15, 1918—

THE FOOD LAW BULLETIN

With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

ROBERT GORDON GOULD, *Editor*

Vol. XIII.

SEPTEMBER, 1918.

No. 9

Rotten Butter.

For several years readers of the JOURNAL have been apprised of the fact that all was not well among the butter makers. There are two types of manufacturers of butter, the so-called centralizers and the "co-ops," the latter being the partners in relatively small co-operative enterprises owned by local aggregations of farmers. By virtue of the fact that the centralizers—the big unit operators—of necessity draw their supplies of cream from far distant points there has sprung up in late years the habit of neutralizing with lime the cream which all too often reaches the centralizer in a state which is perilously close to putrefaction. The cream in question is not merely sour; it is rotten; its proteins have commenced to disintegrate as is evidenced by an ammoniacal odor.

This JOURNAL has at all times maintained that butter should not be made from rotten cream and it has lost many powerful friends by virtue of its attitude. Now comes a statement from James Sorenson, Dairy and Food Commissioner of Minnesota, which entirely substantiates everything that the JOURNAL has ever maintained as to the viciousness of butter made from rotten cream, and, indeed, goes further than the JOURNAL has ever gone along certain lines of comment.

Elsewhere in this number is printed a review of the brief on Butter Standards recently filed with the Joint Committee on Definitions and Standards by Messrs. Sorenson, Heen and Sandholt, being respectively, Dairy and Food Commissioner of Minnesota, Secretary of the Minnesota State Dairyman's Association and Secretary of the Minnesota State Creamery and Cheese Factory Operators' and Managers' Association—representing in all about eighty thousand Minnesota farmers.

The brief is a frank statement of conditions in the manufacture of butter, conditions which are "repulsive to the human senses of taste, smell and decency." Commissioner Sorenson and his associates say that neutralized butter "is often made from cream which is dirty and decomposed, repulsive to the senses and unfit for food." A. J. Maguire, the dairy expert of the University of Minnesota, Professor Carl E. Lee, Assistant Dairy and Food Commissioner of Wisconsin, and others of standing in the dairy world are quoted to show the rank, rotten condition of much of the cream used to make neutralized butter, and Commissioner Sorenson reiterates his claim that competent investigators have found cream coming into St. Paul and Minneapolis containing immense numbers of streptococci and colon bacilli—those twin exponents of disease, filth and corruption.

This latest exposure of unspeakably rotten conditions in the dairy industry, while it perhaps contains no statement of fact not made heretofore by other agencies, differs from preceding exposures in this particular. It is made by representative dairymen, one of them of National prominence in dairy circles, selected by a great dairy State as its dairy and food commissioner, and charged not only with the enforcement of the food laws, but with the duty of conserving and fostering the dairy industry.

Entirely aside from any question of standards the statements made by Sorenson and his associates in this brief must be met, and met squarely. If they are true, the conditions must be remedied at once. Every food official, state and national, should see to that. Existing laws are adequate and if the food officials do not take action of their own initiative, the public can be relied on to stimulate the laggards. Recently our

Government announced that it would require 60% of our butter production for the army. "Fat is food for fighters" so the Food Administration tells us, but our army must not be fed "butter" of the kind described by Commissioner Sorenson, made from rotten, decaying cream, infested with deadly disease germs, "resurrected," disinfected, and deodorized with lime.

Lannen Counsels the Use of Saccharin.

During the past few months there has been considerable agitation as to the advisability of permitting the use of saccharin in certain types of commercial food for the duration of the war. At least one state, Texas, has openly declared that saccharin may be used in soft drinks. On the other hand, Louisiana recently issued a warning that the use of saccharin will be followed by prosecution under the State Food Law. The matter is under consideration by many Food Control Officials all over the country.

On September 2, Mr. Thomas E. Lannen, attorney and secretary of the National Manufacturers of Soda Water Flavors, sent to the members of that Association a bulletin in which, after reviewing his unsuccessful efforts to have the use of saccharin passed upon by the Food Control Officials while in convention at Chicago, he advises manufacturers of soda water flavors to "take the bit in their teeth" and use saccharin in goods going into all states which do not specifically prohibit its use by laws, "disregarding all rules, regulations and warnings to the contrary." Mr. Lannen gives it as his opinion that rules and regulations against the use of saccharin cannot be enforced in the courts and calls attention to the fact that there is a difference between positive law and "a mere regulation."

The states in which the use of saccharin is at present legally prohibited are: Alabama, Iowa, Minnesota, Mississippi, Nebraska, New Jersey, North Carolina, North Dakota, Oklahoma, Pennsylvania, South Dakota, Utah and Wisconsin. In all others the use of saccharin is not legally prohibited nor is it, according to Mr. Lannen, legally prohibited by the terms of the Federal Food and Drugs Act. By including the Federal Food and Drugs Act in the latter category Mr. Lannen has challenged the legal effectiveness and enforceability of Food Inspection Decision 142, thereby throwing down the gauntlet in unmistakable fashion. It will be of interest to watch the developments which are quite certain to follow this action.

Rice Standardization in Price and Grade.

Equitable allocation of the rice crop of the country among all rice millers has been arranged by the Food Administration, after conferences with representatives of the trade. Last month rice millers agreed to pay certain basic prices for rough rice for milling, and the latest step is a further following out of the Food Administration policy of assisting the trade in standardization, in order that the consumer may be able to purchase standard grades of rice products at equitable prices.

Subcommittees known as valuation committees have been appointed in various southern and California cities, in which sales offices have been established. These committees were chosen by the Southern Rice Committee of the Food Administration, under whose direction all grading and classifying will be done.

In order to save man-power and expense, all rice is to be weighed at points of shipment to mills, where grading will be done by officials designated by the com-

mittees. No purchases will be made excepting at regular sales offices, unless with prior approval of one of the offices and after a valuation has been set on the rice to be sold.

Each mill will have allotted to it the maximum amount it may purchase of the 1918 crop, based upon its present capacity and its average receipts during the three past seasons. Millers were required to furnish, not later than September 1, a sworn statement covering these facts. All rice is to be bought at the valuation and on the grades fixed by the valuation committees.

Prices, based on rice in bags, will range from \$7.50 per barrel for Nos. 1 and 2, Honduras, Edith and Carolina (River type), to \$6.75 per barrel, Nos. 3 and 4, Japan and Early Prolific. All mills are to pay 6½ cents per barrel as administration fee, to be sent to the Food Administration Grain Corporation, New Orleans. If expenses amount to less than this fee, it will be reduced in subsequent months.

By agreement last month millers pledged themselves to the Food Administration to sell clean rice at not more than 7⅜ cents a pound for choice Japan, to 9⅞ cents for Fancy Honduras.

American Bacon in England.

The new British Food Minister, J. R. Clynes, is continuing the policies of the late Lord Rhondda with respect to the fixing and maintenance of maximum prices, the stimulation of food production and the rationing of important foodstuffs as a means to secure equitable distribution.

The recent freeing of bacon from the meat coupon, comments the London Daily Mirror, is perhaps the best memorial to the visit of the United States Food Administrator.

This has more than a surface significance. It means that the knowledge of what America has done and is doing in food conservation has thus been brought into every home in England. It means that America has made good. She has been able by her national meat saving program to build up a small surplus here and to begin the upbuilding of one across the Atlantic.

Sugar Prices in Other Countries.

The total sugar consumption in the United States for 1917-18 was 8,218,582,000 pounds. In Great Britain the total consumption for 1916 amounted to 3,131,198,000 pounds. In France for the same period it was 1,141,242,000 pounds. In Italy, 553,906,000 pounds; while in Canada, for the year ending March 31, 1917 the total amount of sugar consumed was 704,400,000 pounds.

The wholesale cost of sugar per hundred pounds on May 1 was \$8.07 in Canada, \$12.59 in England, \$12.28 in France, and \$26.30 in Italy, as compared with \$7.30 in this country. The average wholesale cost per hundred pounds in the Allied countries was \$12.52¼, so that if the United States had paid the same price for sugar as that paid by the Allied countries, our national sugar bill would have been increased by \$429,419,864.50.

In Sweden, sugar is now selling at 14 cents a pound, Spain at 19 cents, Brazil at 25 cents, Portugal at 21.4 cents and India at 14 cents.

The present retail price of sugar in the United States is 8½ to 10 cents per pound.

The Bacteriology of Peanut Butter and the Germicidal Action of Arachis Oil

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COGNIZANT of at least untidy if not insanitary conditions in certain factories, and the none too clean methods employed by some retailers of peanut butter in bulk, we undertook, first in the autumn of 1916, to test the possibility of fecal contamination of this product. The investigation has seemed to us a timely one in view of the increased necessity of utilizing all available foods, particularly proteins and fats; the increased use of peanut butter especially derives justification from the work of Johns and Jones,¹ who first showed the presence of proteins, arachin and conarachin, which are unusually rich in basic amino acids, so that peanut butter and meal may properly supplement food products made from cereals and other seeds whose proteins are deficient in basic amino acids. Among these amino acids, arginin, histidine, cystine and lysine are present. Lysine is particularly abundant, and, inasmuch as Osborne and Mendel² and others have indicated the absolute necessity of preformed lysine for animal growth, it is clear that peanut butter affords one of the best vegetable substitutes for meat.

While an equally valid plea for the substitution of peanut butter for cow butter cannot be made in view of its apparent lack, along with most other vegetable oils, in fat-soluble vitamins, yet this fact need not necessarily contra-indicate its use, since there has not yet been any question of the edibility and digestibility of this and other fat substitutes, and the vitamin deficiency can easily be made up in a sufficiently well varied diet of vegetables, milk and eggs.³

Far from any indictment of peanut butter as a possible source of intestinal infection, our results have failed to show the presence of *B. coli* therein, even if this organism could be considered a sign of possible danger, as Jordan⁴ thinks it could not in most foods, due to the opportunity for multiplication. But here is a food in which *B. coli*, as well as several of the most common intestinal pathogens, tend, not to multiply, but to die out because of a germicidal action of the natural oil in the food itself. Omeltschenko⁵ has tested the germicidal action of the vapors of various aromatic oils upon *B. typhosus*, *B. tuberculosis* and *B. anthracis*, and Bachmann⁶ has shown the weakly antiseptic action of the extracts from certain spices on some molds and certain bacteria. Aside from these, the antiseptic and germicidal properties of oils are largely unknown.

The process of manufacture of peanut butter in several factories inspected in the San Francisco Bay region apparently coincides with that outlined by Beattie⁷ except that none of the factories provide facilities wholly adequate from the standpoint of the aesthetic and sanitary ideals therein set forth and usually accepted as desirable for the preparation of food products. One factory owner of Alameda refused to allow inspection and explained frankly that he was ashamed of the appearance of his place. In another establishment wraps of the workers were hanging in the same room where containers were being filled and there was

a general appearance of untidiness. In still another factory various fruit preserves were being prepared in the same room; some of these finding their way to the floor were allowed to remain, giving an entirely disgusting aspect to the general appearance of the room. Peanut butter was being filled into glasses which were previously wiped with cloths sufficiently soiled to merit the charge of being uncleanly if not actually insanitary. As to the most important point of all, that is, the personal health and habits of the workers, we have no evidence that the valuable precautions as to clean hands and tidy appearance followed in the best food-packing establishments are always insisted upon; on the contrary, one gained the impression that such precautions were generally ignored. Fortunately, the manufacture of peanut butter involves very little necessity of actual contact of human hands with the product if we except the sorting out of decayed meats after blanching. In certain cases even this handling might be minimized by wider sorting belts and better distribution of the nuts thereon, so that only the defective ones would be touched.

There remains but one point in the manufacture to be emphasized, that is, that nothing is added to the ground nut meats except 1 to 3 per cent of salt; the native oil of the peanut is sufficient to give the desired consistency and, as we have shown experimentally, preservative action against putrefaction.

Peanut butter is retailed in the San Francisco Bay region in sealed tumblers, jars and bottles, and in pasteboard cartons from firkins, tins, crocks and even 500-pound barrels. The use of cartons has seemed objectionable in some cases where the personal cleanliness of the clerk was in question. The observation has been made of a clerk wiping the ladle into the carton with his finger. The original container in some stores stands open for days or even weeks before being emptied; during this time it is dipped into again and again. From the viewpoint of cost, peanut butter dispensed thus in bulk is considerably cheaper than that sold in glass, averaging 15 to 20 cents per pound as against 40 cents. It is a curious fact that peanut butter seems to be sold only in glasses in the poorer districts.

Bacteriological Examination of Commercial Peanut Butter.

For the purposes of our tests, 29 small lots were bought at intervals from 22 separate stores and factories. These were taken immediately to the laboratory where one gram samples were suspended and emulsified in 10 cubic centimeters of distilled water by grinding in a sterile mortar. The larger particles were removed by straining the suspension through a piece of loose absorbent cotton over cheesecloth in a small funnel, to avoid confusion with bacterial colonies in plates. All procedures were conducted according to the strict rules of bacteriological technic to avoid contamination. One cubic centimeter quantities of the uniform suspension so obtained and dilutions thereof representing 0.01, 0.001, and 0.0001 of a gram were

pipetted into agar prepared according to the Standard Methods for the Examination of Water and Sewage of the American Public Health Association. Plate counts were made after 48 hours' incubation at 37° Centigrade, and from these, estimates upon the basis of colonies per gram were made according to current rules, having reference to the number of colonies developing upon the plates, that is, no estimate was based upon a plate count of more than 250 colonies or less than 25, except where the largest amount inoculated, i. e., 0.1 of a gram, gave such a count. Presumptive tests in lactose broth fermentation tubes were considered negative if gas failed to appear in 48 hours. Positive presumptive tests were streaked upon litmus lactose agar plates, and isolated colonies, both red and blue, were studied for morphology by Gram's staining method.

Fifteen lots of peanut butter were studied in all the features of the above outline of technic; in six lots the presumptive test was omitted, but a careful examination of all the various colonies appearing upon the plates was made. All examinations were concerned simply with aerobes; only indirect evidence was noted of the undoubted presence of anaerobes in peanut butter. Results of these tests are summarized in Table I.

TABLE I.

Agar Plate Counts of Commercial Peanut Butter Samples.		
Colonies per gram.	Number of samples.	Approximate percentage.
Less than 100	7	33.3
100-250	4	19.0
250-500	5	23.8
500-1000	1	4.7
1000-5000	2	9.5
Over 5000	2*	9.5

Total21

*1 at 5,600, 1 at 2,010,000.

None of the first 15 samples produced gas in lactose broth fermentation tubes inoculated with 0.1 of a gram or less; only three produced gas in tubes inoculated with 1.0 gram. These samples gave counts of 780, 4,000 and 2,010,000 colonies per gram, respectively; they were therefore among those having the largest number of aerobic organisms present. Litmus lactose agar plates streaked from these presumptive tests showed red colonies in each case due to *Staphylococcus albus*. No colon bacilli were isolated, but gram-positive sporulating bacilli of the hay bacillus group were numerous. We conclude, according to the practice in water examination, that gas production in these samples was due to anaerobic or aerobic sporulating microorganisms.

The six other samples in Table I, not tested in lactose broth but examined carefully for variety of species in the plates, showed *Staphylococcus albus* in each instance and hay bacilli in three cases. Of these six, four had less than 100 colonies per gram, one 190 and one 250.

In eight further tests only qualitative examination was made, streaking suspensions by loop, without enrichment, on plain agar plates. Five of these gave no growth by this method. Two gave growths of hay bacilli; one gave a growth of staphylococci.

Germicidal Action of Peanut Butter.

The above results were so surprising to us, as failing to show the presence of the colon bacillus, which, in view of the prevailing condition of manufacture and

distribution, must frequently gain access to peanut butter, that tests were undertaken to prove a possible germicidal action on this organism.

Peanut butter was sterilized in the autoclave at 15 pounds pressure for 20 minutes. This alters its appearance slightly, especially on the surface, where it darkens; the taste is also changed, being flatter and less agreeable. These effects are particularly noticeable if small amounts of water are present. After sterilization the upper layers were discarded, due to their apparent partial impregnation by steam. A growth of *B. coli* communior scraped from a fresh agar culture was mixed as thoroughly as possible with the remainder. Agar plates inoculated with dilutions satisfactory for counting were made immediately and at intervals. Similar tests were made subsequently with three other samples, as noted in Table II. In one of these sterilization was omitted; the figures therefore include the bacteria already present in addition to the added colon bacilli. The mixtures were all kept in a dark cupboard at room temperature.

TABLE II.

GERMICIDAL ACTION OF PEANUT BUTTER ON *B. COLI* COMMUNIOR.

Days.	Sample I. Sterilized Nov. 25, 1916.	Sample II. Sterilized Dec. 2, 1916.	Sample III. Unsterilized Dec. 14, 1916.	Sample IV.* Sterilized Dec. 15, 1916.
0	30,400,000	11,000,000	26,500,000	30,000,000
2	12,800,000	.....	.....	.....
3	4,300,000	.....	.....	8,600,000
4	.....	.....	6,100,000	.....
6	3,400,000	1,400,000	.....	4,100,000
8	2,300,000	.....	.....	.....
9	.....	530,000	.....	.....
13	1,170,000	1,170,000	5,300,000	.....
14	.....	.....	.....	3,800,000
17	.....	980,000	.....	.....
18	1,700,000	.....	.....	.....
19	1,560,000	.....	.....	.....
20	.....	.....	.....	800,000
21	.....	.....	4,800,000	.....
24	1,190,000	.....	.....	.....
25	.....	810,000	.....	.....
27	.....	.....	2,600,000	1,370,000
32	192,000	.....	.....	.....
33	.....	740,000	.....	1,400,000
34	.....	.....	3,540,000	.....
39	.....	159,000	.....	.....
40	139,000	.....	.....	.....
46	170,000	.....	.....	500,000
48	.....	210,000	.....	.....
50	.....	.....	3,210,000	.....
55	52,000	.....	.....	1,280,000
58	.....	217,000	.....	.....
63	.....	.....	2,610,000	.....
65	74,000	.....	.....	1,200,000
72	.....	197,000	3,000,000	.....
74	.....	.....	.....	280,000
79	108,000	.....	.....	.....
82	.....	.....	980,000	.....
88	.....	.....	.....	1,160,000
91	.....	.....	1,070,000	.....
92	84,000	.....	.....	.....
94	.....	21,600	.....	.....
101	47,000	.....	.....	.....
103	.....	.....	101,000	.....
105	.....	.....	.....	810,000
116	105,000	.....	.....	.....
120	.....	.....	140,000	.....
125	.....	.....	.....	300,000
128	10,000	.....	.....	.....
140	.....	.....	200,000	.....

*Same sample as No. III.

The numbers refer to estimated colon bacilli per gram, except in unsterilized samples, where all aerobic organisms are counted.

Notwithstanding certain discrepancies in the counts recorded, there can be no doubt of a general and gradual progressive decrease in colon bacilli, and this

occurs without reference to whether the peanut butter has been heated or not. We are inclined to account for the few discrepancies as due to uneven distribution of oil throughout the mass and our failure to obviate irregularities due to this possibility by thorough mixing of the whole sample at the various times of sampling. This view is supported by our later finding that the germicidal property resides in the oil.

Similar tests were made with like results in the case of typhoid and the paratyphoids alpha and beta, as shown in Table III. These cultures were secured from the laboratory stock and were re-tested for identity by Gram's stain, action on glucose and lactose fermentation broth, gelatin, and by agglutination reactions. Different samples of sterilized peanut butter were used for these tests.

TABLE III.
Germicidal Action of Peanut Butter on B. Typhosus, B. Paratyphosus A, and B. Paratyphosus B.

Days.	B. typhosus- Rawlings, Feb. 23, 1917.	B. para- typhosus "A," Mar. 21, 1917.	B. para- typhosus "B," Mar. 12, 1917.
0	1,770,000	73,000,000	182,000,000
5	660,000		
14			39,000,000
15	200,000		
16		2,600,000	
24	20,500		
32	7,200		
34		2,900,000	
42	3,900		
44			12,500,000
60	2,750		

The numbers refer to estimated organisms per gram.

It is seen that none of these experimentally contaminated samples were studied long enough to prove complete disinfection. At this stage in the research we became interested in identifying the germicidal substance in the peanut butter which was easily shown to be the oil, in which it appears that the organisms die out much more rapidly.

Germicidal Action of Arachis Oil on B. Coli Communior.

Arachis oil was secured, first, by pressure, later by ether extraction of commercial peanut butter in a Soxhlett apparatus. That secured by pressure was somewhat turbid; it was clarified by centrifugalization and filtration. In the process of extraction in the Soxhlett the solvent with the oil passes through a filter paper thimble; it was again filtered and the ether evaporated in the open air. Both pressed oil and extracted oil were sterilized by the autoclave at 15 pounds pressure for 30 minutes. Removal from the apparatus while hot precludes the possibility of residual ether sufficient to account for the germicidal action. On cooling oil sterilized in this manner there may be noticed a distinct turbidity which disappears on standing. It is strictly analogous to the emulsions encountered

by one of us (I. C. H.) in certain devices for the cultivation of obligate anaerobes, whose formation is dependent upon the precipitation by cooling of water dissolved in the oil at higher temperatures, and whose disappearance depends upon the evaporation of such precipitated water globules.⁸ No other change occurs in the appearance of the oil, which becomes clear and remains so indefinitely. The extracted oil is a light golden yellow, while the expressed oil is almost colorless.

A pure culture of B. coli communior was suspended in the cooled oil, kept at room temperature in a cupboard, and estimates from plate counts made as in the case of peanut butter at intervals, as noted. Difficulty was encountered in using sterile distilled water for dilution purposes; this was obviated by adopting the use of sterile N/200 NaOH for this purpose. No appreciable error is involved in the use of so dilute an alkaline solution for this purpose; the organisms are exposed for a few minutes only, and moreover, the uniform use of the same concentration in all dilutions makes it impossible to ascribe any effect on the counts obtained to the use of an alkaline diluent. Notwithstanding, a subsidiary experiment on this point was made by suspending B. coli in sterile, pressed-out peanut oil and emulsifying in N/200 NaOH in dilutions of 1-10, 1-100, 1-1000, etc., down to 1-10,000,000. Agar plates were made of one cubic centimeter from each dilution immediately, and after thirty and ninety minutes, and incubated for twenty-four hours at 37° Centigrade. Plates from corresponding dilutions were practically identical in apparent numbers of colonies. Only those from the last dilution could be counted accurately and the thirty minute count of this dilution was partly obscured by a spreader. The other two had 684 and 691 colonies, respectively, an apparent but insignificant increase of a little over one per cent. At any rate, there is no evidence of destruction even for the length of time of this test.

That we should not have had to use alkali in emulsifying peanut butter is due to the fact that peanut butter can be suspended and emulsified readily with indefinite quantities of water; it seems that the suspension of peanut proteins and carbohydrates in peanut butter, where oil forms the external phase, as shown by tests with the oil-soluble, water-insoluble dyes, Sudan III and dimethyl-amido-azo-benzene, is readily transformed by the addition of small quantities of water into an emulsion where oil forms the internal phase, water becomes external, and the other organic constituents of the mass comprise a hydrophilic colloid, acting as an emulsifying agent.⁹

The results of the tests of B. coli in oil are summarized in Table IV. These tests clearly demonstrate the association of the germicidal property with the oil,

TABLE IV.
Germicidal Action of Arachis Oil on B. Coli Communior.

Days.	Pressed Oil Jan. 12, 1917.	Extracted Oil Feb. 11, 1917.	Same Sample Feb. 19, 1917.	Same Sample Mar. 30, 1917.	Extracted Oil Apr. 10, 1917.	Extracted Oil Apr. 16, 1917.
0	252,200,000	10,800,000	14,000,000	100,000,000	9,682,000,000	5,800,000
1					1,322,000,000	2,000
2					30,600,000	Less than 10
3					Less than 10,000	
4		Less than 1,000		Less than 100,000		
5	58,400,000			Less than 100		
6						
10			Less than 1,000			
11	55,000,000					
18	3,020,000					
33	1,820,000					
51	10,000					

and a comparison of that secured by pressure, which may be assumed to provide a less pure product, with oil extracted by ether, indicates that other substances present in the pressed oil tend to inhibit this germicidal action to a degree which explains the failure of complete disinfection in the peanut butter experiments. We have considered the possibility of the more active destruction by extracted oil being due to residual ether as ruled out by the high temperature of sterilization of the oil. A suggestion that an antiseptic substance might have been added covertly in the manufacture of the various lots of commercial peanut butter with which we worked cannot be invalidated in the above tests. Benzoic acid, for example, which is sometimes used as a food preservative, is soluble in ether. Oil was therefore prepared by extraction (in one experiment by cold ether, in another by hot ether) from roasted nuts ground by ourselves. The oil was sterilized and inoculated with *B. coli* as before and kept in a dark cupboard at room temperature. The results of agar plate counts are shown in Table V. The data make it impossible to ascribe the germicidal action to added preservative alone, and indicate that oil extracted by hot ether in the Soxhlett apparatus is more strongly germicidal than that secured by shaking ground nuts in cold ether and filtering.

TABLE V.

Germicidal Action of Arachis Oil Extracted by Ether from Home-Shelled Nuts on *B. Coli* Communior.

Days.	Extracted by Cold Ether		Extracted by Hot Ether	
	Nov. 3, 1917.		Dec. 3, 1917.	
0.....	656,000,000		36,000,000,000	
3.....			1,900,000,000	
4.....			250,000,000	
5.....	234,000,000			
6.....	428,000,000			
7.....	140,000,000		130,000,000	
10.....			83,000,000	
11.....	88,000,000			
12.....			20,000,000	
13.....	95,000,000			
14.....	30,400,000			
15.....			4,000	
17.....	5,000,000		2,540 (oil exhausted)	
19.....	115,000			
54.....	14,800			
62.....	Less than 10			

The possibility of ether-soluble, antiseptic substances being normally present in peanuts cannot be excluded by our experiments. One such, i. e., boric acid, has been claimed by Norton¹⁰ to be present normally in Virginia nuts in amounts of 0.015-0.016 per cent, but it is difficult to conceive that even the weak antiseptic action of peanut oil is due to such small amounts of so ineffective a substance as boric acid.

We are inclined to believe that organisms die out for lack of available food substances. In peanut butter suitable food substances are present, but they are inaccessible so long as oil forms the external phase of the suspension, for, in contrast with the action of the oil, when the peanut butter meal left as a residue from ether extraction is dried, subsequently mixed with distilled water sufficient to give it a consistency comparable to that of the original peanut butter, sterilized, and impregnated with *B. coli* communior, it provides an excellent culture medium for this organism and putrefies in a short time.

The following data of Table VI are illustrative. Here the number increases tremendously for a few weeks, then commences to decrease, probably due to the accumulation of deleterious products of the very evident putrefaction which occurs.

TABLE VI.

Growth of <i>B. Coli</i> in Peanut Butter Meal Free From Oil.			
Days.	Estimate per gram.	Days.	Estimate per gram.
*0..	42,000,000	55..	3,320,000,000
6..	More than 993,000,000	66..	890,000,000
11..	More than 888,000,000	77..	900,000,000
28..	More than 1,112,000,000	100..	510,000,000
33..	3,150,000,000		*Started Jan. 15, 1917.

The outcome of this experiment led immediately to another point bearing directly upon the practice of diluting peanut butter with milk or water previous to its consumption. The addition of 10 to 30 per cent of water gives the paradoxical result of imparting a quality of stiffness and apparent dryness to the moist commercial product, due, no doubt, to the formation of a true emulsion, as already noted. This is thought by some to yield a milder flavor and is known to be practiced in some institutions, e. g., certain sanitariums, for purpose of economy as well. The experiments indicate that if this is done no effort to keep the product should be made, as any bacteria present quickly multiply and lead to spoilage.

In a preliminary experiment, one part of distilled water was thoroughly mixed with two parts of peanut butter by weight. This and a portion undiluted were sterilized in the autoclave and impregnated with *B. coli* communior. Plated at intervals, these samples gave the results noted in Table VII. The tabulated data are self-explanatory; in the absence of added water the bacteria decrease, while in its presence they first increase tremendously, then decrease.

TABLE VII.

Effects of Dilution of Peanut Butter With Water.		
Days.	Undiluted	[2 Parts Peanut Butter
	Peanut Butter.	With 1 Part Water.
0*.....	3,200,000	4,000,000
3.....	890,000	More than 1,000,000,000
5.....	.....	More than 12,500,000,000
11.....	400,000	7,800,000,000
14.....	134,000	630,000

*Started March 10, 1917.

The numbers refer to estimated colon bacilli per gram.

Further experiments were made similarly, which show that probably not much more than 10 per cent of water may be added to peanut butter without danger of rapid spoilage in the presence of suitable organisms, as in Table VIII.

In Experiment "A" the organisms cultivated were only those originally in the peanut butter, i. e., cocci, yeasts and hay bacilli. In Experiment "B" the same was true, while in Experiment "C" the peanut butter was sterilized in the autoclave at 15 pounds pressure for 30 minutes, sterile distilled water added as indicated, together with a small inoculum of *B. coli*, and thoroughly mixed in a sterile mortar. In all cases the samples under test were kept stoppered to prevent evaporation. In Experiments "B" and "C" the peanut butter was secured from a small grinder located in a public market where we could make sure that nothing was added to the ground nuts but salt. The tests show that the addition of 10 per cent or more of water, depending, no doubt, upon the proportion of oil present in the individual sample, permits a rapid increase of micro-organisms, which is likely to be followed in the case of bacteria, notably the colon bacillus, by a decrease. This decrease we have interpreted as due to the same sort of influence which cause the cessation of growth in the culture tube, that is, the accumulation of deleterious waste products. The addition of water also predisposes to moldiness through the growth of *Aspergillus*, *Rhizopus* and possibly others.

TABLE VIII.
Effect of Water Upon the Keeping Properties of Peanut Butter.

EXPERIMENT "A."				
Spoilage Due to Indigenous Organisms.				
Days.	Added Water			
	None.	5%	10%	20%
0.....	34,000,000	26,000,000	15,000,000	19,500,000
9.....	3,000,000	2,290,000	9,000,000	570,000,000
10.....				

EXPERIMENT "B."				
Spoilage Due to Indigenous Organisms.				
Days.	Added Water			
	None.	10%	20%	30%
0.....	300	.....	.....	.....
2.....	240	250	101,000	About
5.....	70	1,570	**	1,000,000
13.....	70	1,150	Not plated*	Not plated†
21.....	20	450	.....	.....

**About 10,000,000.

*Covered with molds—predominantly *Aspergillus*.

†Covered with molds—predominantly *Rhizopus*.

EXPERIMENT "C."				
Spoilage Due to <i>B. Coli</i> in Sterilized Peanut Butter.				
Days.	Added Water			
	None.	10%	20%	30%
0.....	2,010,000	88,000	1,450,000	4,510,000
4.....	4,000,000	800,000	8,000,000	350,000,000
9.....	Less than 100,000	200,000	400,000	2,030,000
10.....	35,000	219,000	96,000	3,700,000
24*.....	Sample not moldy	Sample not moldy	Sample slightly moldy	Sample very moldy

Numbers show estimated count per gram.

*No plates made—molds not determined.

Summary.

This paper notes that conditions of manufacture of peanut butter and its sale in bulk are such as to offer rather frequent opportunity for contamination. Considering our present knowledge, there is no reason why peanut butter should not be nearly if not quite sterile when marketed; even the relatively low counts obtained might be reduced. The colon bacillus was not demonstrated in commercial peanut butter; its absence probably depends upon the fact that peanut butter exerts what we have called a germicidal action,

although it is probably more accurate to consider that the organisms die out merely because the oil makes the proteins and carbohydrates suspended in it inaccessible for bacterial growth. The related pathogens, *B. typhosus* and *B. paratyphosus* alpha and beta, are similarly affected. The germicidal property has been shown to reside in the oil of the peanut, a possibility of its being due to added preservatives having been excluded. Moistened peanut meal from which the oil has been extracted permits *B. coli* and other organisms to multiply rapidly, as does also peanut butter to which more than 10 to 20 per cent of water has been added. The addition of water to improve the flavor of peanut butter by transforming a suspension in oil to an oil in water emulsion, or for the sake of economy, therefore, invites spoilage.

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Grain Corporation Capital Increased.

The Food Administration Grain Corporation was expanded by an executive order signed by President Wilson June 24. Its capital stock is increased from \$50,000,000 to \$150,000,000, divided into 1,500,000 shares with a par value of \$100 each.

This executive order is for two purposes:

First, to enable the Food Administration to make the necessary readjustments in wheat price to cover the increase in railway rates. The intention is, so far as the complex problem of railway rates will permit, to readjust prices at the guaranty terminals on such a footing as to place the farmer in the position—as near as may be—he enjoyed prior to the increase in rates.

The second purpose is to provide for the increased capital to the Grain Corporation necessary to carry out the Government guaranty to the producer. The Food Administration operates its handling of wheat, flour and other cereals through the Food Administration Grain Corporation, the capital of which during the past year has been \$50,000,000, the whole of the stock being owned by the Government. The full appropriation under the food bill for this purpose is \$150,000,000, and the balance of the capital must now be employed in order to make good the guaranty, in view of the large harvest. The Grain Corporation on July 1

completed its operations for the past harvest year and will show its original capital intact, with a small surplus, as the result of its trading operations. The turnover of the Grain Corporation during the year in wheat, flour, beans and other products purchased for internal and allied army and navy purposes was about \$450,000,000.

Fish in Alaska.

Although final figures showing the value of the fisheries products of Alaska in 1917 are not yet obtainable, compilations indicate that the total value of such products was \$51,405,260, according to an announcement by the Bureau of Fisheries. Of this sum, \$47,778,081 (93 per cent) represents the value of salmon products, which consist of 5,947,286 cases of canned salmon, valued at \$46,304,090, and 16,347,367 pounds of mild-cured, pickled, dry-salted, fresh and frozen salmon, valued at \$1,473,991. The halibut fisheries rank second, with an output valued at \$1,120,226. The herring fisheries come next, with a yield of products valued at \$767,720. The value of cod products was \$744,976, and whaling operations returned products worth \$653,852. Miscellaneous fisheries products, including clams and other shellfish, aggregated \$304,396 in value.

Food Administrator Hoover's Statement.

Mr. Hoover made the following statement in New York, August 23, upon his return from his trip to Europe:

"The harvests in France, England and Italy are better than one could expect in the tremendous drain of man-power to the front. This is due to the women. There is no sight in the world that would so appeal to the American heart as that of the literally millions of women doing all the work of getting in the harvests while their men are at work in the shops and driving back the Germans.

"The total food that must be imported by the Allies for human consumption in the year beginning September 1 is in round numbers as follows:

Cereals for human consumption (bus.)	500,000,000
Fats (pork products, vegetable oils) (lbs.)	4,000,000,000
Sugar (tons)	1,500,000
Beef products for civilian consumption (lbs.)	900,000,000

"In addition to this, beef must be imported for army needs and oats for army horses.

"If this program is fulfilled there will be no need for drastic rationing of their food as during last year except in beef and sugar. The world shortage in these two commodities makes it hopeless to satisfy their whole need. On the other hand, this program provides an ample supply of bread and fats, without the rationing of either, and together with their own production gives sufficient supplies. The restrictions on the consumption of pork products in Allied countries have already been removed and after September 1 bread will be in full supply and of better quality than last year—and it has been pretty bad in France the last few months.

"After shipping is set aside for the transport of the American army and for military purposes of all the Allies, a definite amount of tonnage is made available for the transport of the program of food for civilian consumption. The purpose of our European food conference has been to determine the amount of food upon which health and morale can be maintained, and to determine the nearest possible sources of supply of this food to the Allies, for only by the shortest voyages, such as to North America, can the above supply be provided with the tonnage available. Therefore, upon North America falls the burden of food supply and any failure means that much less food for the civil populations. While Canada can export 100,000,000 bushels of grain this year, the major part of the Allied program for next year falls upon us. We have also to feed our enormous army. It is the largest call for food exports we have ever undertaken. We can do it if we simply have the will to live with every economy and to waste nothing, and it will put us to no hardship.

"By the great effort of our farmers our United States harvests are better this year, but in order that we may build up a surplus of wheat this year as against possible crop failures such as we had last year, we have decided to mix 20 per cent of other grains with wheat flour in all the countries fighting Germany. We cannot ask for better bread than France, and we propose the American people should maintain a common standard of bread with them. Under these arrangements, however, the bread situation in the United States will be much easier than last year, and in the Allied countries will be enormously improved. Bread to them is of the first importance as it comprises 50 per cent of their food intake. By supplying them with

bread and fats in such amounts as will not necessitate rationing on their side we can rest assured that their courage and strength in the war will remain high during next winter. It will be a bad winter in Europe because coal will be much shorter there than even last winter, and the health of their populations cannot be maintained if they, in addition, are to be also restricted in their allowance of bread and fats. Our complete fulfillment of our last year's promises in food and our assurances to furnish even larger supplies this next year have removed from them the last fear of hunger.

"There is much bitter complaint abroad at the prices of our food products. It is necessary to remember that the working people and soldier's families of the Allied countries are upon a much lower average income than our own people. The average wage is not over \$10 per week. The government allowance to the average soldier's family is considerably less than this. American bacon at 50 cents per pound is very high for them. Their governments have found it necessary to sell our breadstuffs at a great loss in order to help the people out. On the other hand, the higher wage level in the United States renders our production costs higher in any event.

"The only real difficulty in the United States is sugar, and that is a shortage that cannot be helped. We cannot take ships from carrying our Army or Allies' bread and send them to the East Indies to fetch us candy and sweet drinks, and we will simply have to divide the West Indian sugar with the Allies and put up with what we have. There is, even then, enough sugar for the essential uses for everyone, and much more than our friends in Europe have.

"Since I have been away I have been thanked time and again for what the American people have done in food during the past year. The men, women and children of the Allied countries at meetings and gatherings of all descriptions expressed heartfelt appreciation for the sacrifices we have made which have meant to them their daily bread during last year. They universally express amazement at its accomplishment on a voluntary basis. I have some many thousand letters from children which I am asked to distribute to children in America, expressing directly their knowledge of whence and how their loaf came to them. I have replied to all these demonstrations, and I believe the American people will support the attitude, that any expressions of this kind are unnecessary, that this war in part belongs to us, and that effort in food production and saving by our people is but a part of our job against a common foe.

"Upon the President's authority that we eat at a common table in a common cause, I have given assurance to my food colleagues in Europe that we will provide the enlarged demands for next year. We have to make good."

Less Meat, More Butter, in Storage.

Heavy decreases in meat stocks held in cold storage since June 1 are reported by the Bureau of Markets while stocks of butter are increasing. Decreases are shown for all classes of poultry. The movement of eggs from storage has begun, a month earlier than usual, and since July 1 more eggs have been taken out of storage than have been received by cold-storage plants.

By virtue of an act effective June 20, 1918, W. A. Barr has been installed as Dairy Commissioner of the State of Arizona.

Neutralized Butter

IN a brief which was recently filed with the Joint Committee on Standards and Definitions at Washington, the literature on the moot subject of butter standards has received an accession replete with sensational and astounding allegations of fraud, unfair trade, and the use of worse than questionable raw material in the butter supply of the nation. The brief is signed by James Sorenson, Dairy and Food Commissioner of Minnesota, by Chris Heen, Secretary of the Minnesota State Dairyman's Association, and by H. Sandholt, Secretary of the Minnesota State Creamery and Cheese Factory Operators' and Managers' Association.

Summarizing the recommendations of Commissioner Sorenson and his associates it appears that they desire and recommend:

1. A single butter fat standard of 80 per cent, leaving the moisture at 15.99 per cent, as at present.

2. Prohibition of the manufacture and sale of butter from the foul, rotten cream which they claim is now neutralized, made into butter, and sold to the consumer as "Fancy Creamery Butter."

3. The manufacture under Federal inspection and supervision of all butter in which cream, high in acid but otherwise unobjectionable, is neutralized and then made into butter, and the labeling of such product as "renovated cream butter." This evidently means Federal Inspection of creameries.

4. The enforcement of existing laws to accomplish the preceding recommendations; or if such laws are inadequate, the enactment of new legislation effective for the purpose.

The fact that the brief is signed by James Sorenson, State Food Commissioner, the highest dairy official of one of the great dairy states, and by the representatives of practically all of Minnesota's cooperative creameries, insures careful attention to the statements of fact, the arguments, and the recommendations made.

It is claimed by its authors that the brief "is filed on behalf of the dairy farmers of the State of Minnesota—some eighty thousand dairy farmers whose interest in dairying, particularly in the production of butterfat for butter making is not a side line or pin money proposition but is their chief means of livelihood." Perhaps some light is thrown on the activity of the farmers' representatives by the statement, set out in the brief as a fact, that the farmers receive from three to ten cents more per pound for butterfat from the cooperative creameries than they receive from the centralizers.

The brief strongly opposes allowing the manufacture and sale of neutralized butter made from rotten cream, and claims that the evidence adduced at the hearings before the Joint Committee discloses that such butter is sometimes made from raw material so foul, so disgusting in its nature, as to be revolting to decency. On this point Commissioner Sorenson and his associates say:

"Not for one moment should the Committee consider any standard which will allow the sale under any name of 'butter' of a product made from the decayed, ill smelling, dirty cream which the evidence presented before the Committee shows that at least some manufacturers, by the use of neutralizers, are now palming off on the innocent consumers as 'Fancy Creamery Butter' and which is the result of a renovation process of a raw material repulsive to the human senses of taste, smell and decency."

"The testimony before the Committee shows that this product is often made from cream which is dirty and decomposed, repulsive to the senses and unfit for food."

On the same subject the brief further says:

"Commenting upon the condition of cream coming into St. Paul, Dairy and Food Commissioner Sorenson said:

"Here is just a little information that may be of interest to the Committee. Dr. Stiles here in this city made an investigation of cream in the Twin Cities and he found that there were as many as 10,000,000 streptococcus in it, and as many as 5,000,000 colon bacteria. That is the condition of some cream coming into the Twin Cities according to the investigation of Dr. Stiles."

Continuing on the subject of "neutralized" butter, the brief says if cream, high in acid but otherwise unobjectionable, is neutralized and then made into butter, it should be classed with other butter substitutes such as renovated or "process" butter, which is made under Government inspection and supervision, and should be marketed as "Renovated Cream Butter" and not, as it is sold today, under the name of the genuine article. The interesting suggestion of Federal inspection and supervision of creameries which use neutralizer in the manufacture of butter is found in the following paragraphs:

"Hence, we believe in, and we urge upon the Committee, the necessity of requiring all 'butter', except the genuine article churned from pure milk or cream with or without salt and harmless color, to be manufactured under the strict supervision of the pure food officials. Otherwise abuses of the present practices as referred to will continue. 'Butter' produced from butterfat, chemically treated and renovated is not genuine butter. It falls in the class of butter substitutes such as Renovated or Process butter now required by law to be made only under official supervision and not to be sold except under a properly descriptive label."

* * *

"We believe the product of the neutralizers should be made under federal regulation, and that the rules covering its production and sale should be imposed by government officials.

"We believe the product should not have the name of butter—at least not unless so qualified as to thoroughly inform the consumer as to the true quality of the raw materials used, and we respectfully suggest that the product be termed 'Renovated Cream Butter' which it is.

"We believe that no cream which is decomposed to such an extent as to be unfit for human food, however treated, should be allowed to be made into 'butter' of any kind. We believe this is necessary to protect the good name of creamery butter."

On the subject of casein in butter the brief says:

"The testimony before the Committee shows that some manufacturers of 'butter' have used abnormal processes and methods and materials, and thus have incorporated into the finished product 8%, or 10%, or even more casein. This is done to cheapen the product. The extra, 6, 8 or 10% of casein which is worth five cents per pound, takes the place of a corresponding amount of butterfat worth approximately fifty cents per pound at the present time. Such 'butter' will be found to contain the limit of moisture or about 15.9%, from three to five per cent of salt, and from 8 to 12% of casein. This reduces the butterfat to something like 72 or 73%, and when, as is now the case, such 'butter' can be sold as, and at the price of genuine butter the profit to the dishonest manufacturer is very great, and the consumer is robbed proportionately. The proposed standard of a minimum of 80% butterfat will do away with the casein fraud."

The brief is especially strong on the harm which it is claimed has come to the dairy industry as a whole, and to Minnesota dairying in particular, through the fraudulent competition of the neutralized butter, or as the writers of the brief put it:

"Due directly to the use of neutralizers in the renovation of old, stale cream in various stages of decay, our

local creameries and the 72,000 to 80,000 farmers connected with them, have for some years been subject to a most unfair competition in the market for cream as well as in the butter market, from central plants inside and outside the state. This is of vital interest to the Committee because this unfair competition is based wholly on the twilight zone of doubt as to the proper definition and standard for butter, the twilight zone which the Committee has undertaken to abolish. As long as large, organized capital can sell 'butter' made from old cream in all stages of acidity, decomposition and rancidity, through the addition of alkalies, as fancy creamery butter, so long will and does capital go right into co-operative creamery communities and bid for cream, not so much by paying a higher price for a time, but always and forever by purchasing any old kind of cream, no matter in what condition, relying on neutralizers to renovate it and on absence of a standard to sell the 'butter' made from it. That this unfair competition, if continued, will eventually lower the quality of all butter, goes without saying."

After reviewing the history of the Federal Laws which regulate, or which are supposed to regulate the manufacture of butter, the authors of the brief, although disclaiming any pretensions to learning in the law, score what may prove to be a telling legal point in discussing the question of what is the "product usually known as butter" as those words are used in the United States statutes. They call attention to the fact that, at the time when the Federal Laws were passed, cream neutralization was unknown as a practice in the manufacture of butter, and hence the neutralized product could not have been meant by the law makers when they used the words "the product usually known as butter." A determination of the proper meaning of these words undoubtedly is vital in the framing of any standard. Upon this point the brief says:

"No community of farmers anywhere goes into butterfat production for buttermaking purposes as a business or stays long in it, without either organizing itself into a co-operative association or in other ways establishing a butter factory right in its midst. This fact may not interest the Committee, but the fact that it is this community dairying all over the country which produces the bulk of our creamery butter and is the backbone of our dairy in-

dust, certainly must, inasmuch as it is the butter so produced which Congress had in mind when it referred to the product "usually known as butter" and later, when for the protection of producers, consumers and manufacturers, it defined adulterated and renovated 'butter'. Practically no other creamery butter was manufactured in 1902 when the last butter law was enacted and certainly the adding of alkalies to butter fat in the form of cream for buttermaking purposes had not become a practice."

Scoffing at the claim of the centralizers that their neutralized butter is "the product usually known as butter," the brief proceeds:

"When the users of neutralizers claim that sweet cream cannot be had at the average creamery, they appear to forget that their employment of neutralizers is exactly the cause of the demoralization of the quality of the cream supply. When they set up the claim that their 'butter' on the whole is better and sells for more money than our genuine butter, and when they try to show, at these hearings as well as in trade press, that their methods of buying and shipping cream, and of manufacturing and marketing butter are now commonly and openly accepted standard practices, the Committee will readily see that their object is to prove that their 'butter' made from cream that must be doped with alkalies before it can be made into butter, is in truth the product 'usually known as butter' and therefore legal. It appears to us that if this be the case, then the grocer who gives short weights and keeps increasing his trade and isn't found out, thus eventually would establish his own short weights as correct weights."

The filing of this brief before the Joint Committee on Definitions and Standards by Commissioner Sorenson and his associates, representing the State Government, and the dairy farmers of Minnesota, following as it does, the action of Minnesota and North Dakota Federal Food Administrators in barring long distance cream shipments to centralizers, shows very plainly that the Cooperative Dairy Industry of the great northwest is engaged in a finish fight with the Centralizers of the country. The brief is printed in full in *The Dairy Record* of St. Paul, Minn., and should be read carefully by all who are interested in food manufacture.

Condensed Milk Is Carefully Inspected.

Federal food inspectors of the United States Department of Agriculture are giving special attention to factories where milk is condensed or evaporated for use of the allied armies and for consumers at home, according to the officials charged with the enforcement of the Food and Drugs Act.

Condensed or evaporated milk is a most important article of food even in peace times, in the opinion of the officials. In time of war, evaporated milk becomes a necessity, because it can be transported with ease and will keep a reasonable time under conditions where it is impossible to obtain or keep fresh milk. As much as 80 per cent of the output of many large factories is being shipped overseas for the use of the allied armies.

Inspectors are carefully examining the sanitary condition of factories where milk is condensed or evaporated, sterilized and canned. Samples of the raw milk as received at the factories are taken for analysis by chemists and bacteriologists to see that it is clean and wholesome and that it possesses the proper proportion of butter fat and other ingredients. They study the processes of evaporation, sterilization and canning, and take samples of the finished evaporated product for examination, in order that it may be determined whether the evaporated milk has been condensed to the proper constituency, contains the right

food elements, and is clean and wholesome. The contents of the cans are weighed and compared with the amount stated on the labels. The labels on the cans are critically studied to see that there is no misbranding or false statements made regarding the quantity, the quality or the strength of the evaporated milk.

Inspectors of the various states co-operate with the federal food inspectors in this work. The Federal Food and Drugs Act applies only to shipments of foods that enter interstate or foreign commerce. State inspectors have jurisdiction over products made and sold wholly within the State.

The joint authority of the federal and state inspectors often enables them, working together, to correct abuses which either, working alone, could not reach. Adulterated or misbranded condensed milk, when shipped into interstate or foreign commerce, may be seized under the Federal Food and Drugs Act, and the manufacturer or other responsible party may be prosecuted under the criminal sections of the law. The state food inspectors have authority, under the law of some states, to require insanitary factories to close until put into sanitary condition.

Evaporated or condensed milk, as defined for the guidance of the officials in enforcing the Food and Drugs Act, must be made from whole, fresh, clean milk, and contain not less than 25.5 per cent of total solids, and not less than 7.8 per cent of milk fat.

False Advertising Laws

IN every industry—and not least in the food industry—the question of fraudulent advertising is constantly coming up. It is the purpose of this article to point out exactly what is held to constitute false advertising, what states have taken measures to deal with the problem, what these measures are, and what results have followed.

In the first place, there is what is called a Model Statute. Its initial assembling was due to *Printer's Ink*, which did considerable educational campaigning for its adoption. The advertising clubs, however, got behind the movement and were largely responsible for the widespread adoption of laws of this kind throughout the country. The Model Statute follows:

Any person, firm, corporation or association, who, with intent to sell or in any wise dispose of merchandise, securities, service, or anything offered by such person, firm, corporation or association directly or indirectly, to the public for sale or distribution, or with intent to increase the consumption thereof, or to induce the public in any manner to enter into any obligation relating thereto, or to acquire title thereto, or any interest therein, makes, publishes, disseminates, circulates, or places before the public, or causes directly or indirectly, to be made, published, disseminated, circulated, or placed before the public in this state, in a newspaper or other publication or in the form of a book, notice, handbill, poster, bill, circular, pamphlet, or letter, or in any other way, an advertisement of any sort regarding merchandise, securities, service or anything so offered to the public, which advertisement contains any assertion, representation or statement of fact which is untrue, deceptive or misleading, shall be guilty of a misdemeanor.

Already this statute has been adopted in twenty states: Colorado, Idaho, Indiana, Iowa, Kansas, Minnesota, Missouri, Michigan, Nevada, Louisiana, Nebraska, Kentucky, New Jersey, North Dakota, Ohio, Rhode Island, Washington, Wyoming, Wisconsin and Oregon.

In addition to these states, there are eighteen other states which have laws against dishonest advertising. They are: Alabama, California, Illinois, Maryland, New York, Utah, Connecticut, Massachusetts, Montana, North Carolina, Pennsylvania, Oklahoma, South Dakota, Tennessee, West Virginia, Virginia, and also Hawaii and the District of Columbia. The chief difference between the laws adopted by these states and the Model Statute is that the former insert the word "knowingly" before the phrase, "makes, publishes, disseminates, circulates," and so forth.

So far as we have been able to ascertain, there are at present no false advertising laws pending in other states.

The weakness of the laws which do not follow absolutely the Model Statute is the weakness of all laws which require proof of *intent* to defraud. All remedial legislation of today is moving steadily away from the old "caveat emptor" theory which held it perfectly good business ethics to hoodwink the customer if the seller could get away with it. "Let the buyer beware" is no longer accepted as the slogan of business. More and more is the burden of proof being put upon the merchant. The truth and nothing but the truth must constitute his claims. The fraudulent advertising laws come in at just this point—but not all of them are efficacious.

The general experience of all legislation has gone to show that where *intent to deceive* must be proved

—that is, where the law reads "knowingly,"—the chances of conviction under that law are very small. For example, wherever states have had old state food laws which incorporated the word "knowingly," this word has been taken out. A conviction made under the old Illinois food law of 1845 was reversed because the plaintiff had failed to prove that the offense was committed "knowingly" and this reversal is cited even today.

Ex-Judge Frank C. Brooks of the Circuit Court of Minnesota said, along this line, although he was discussing specifically the Model Statute: "The only feasible remedy is to make unlawful the untrue advertisement which is the essential fact embodied in the consummate fraud. Fraudulent advertising cannot indeed be otherwise effectually *prevented*. If necessary to prove scienter (knowledge) few convictions can be had because of lack of proof, and if the illegality consist only in proof of an actionable fraud, the difficulty of preventing fraud and imposition upon the public by such means would be almost insurmountable.

This has been amply proved. The instance above of the reversed conviction under the old Illinois food law, and its citation in cases even now, is obvious reason for the statement of one lawyer that in cases under such laws "I'd rather be on the defense than the prosecution."

On the other hand, the Model Statute has proved very efficacious indeed. In cities all over the country vigilance committees of advertising men, working in close co-operation with the organization of the Associated Advertising Clubs of the World, have been active in obtaining the enforcement of the law. Prosecutions are resorted to only in extreme cases and after moral suasion has been used without success. As a consequence, out of 1800 cases investigated by the committees only 22 prosecutions have been necessary. After a year's thorough investigation of the results of the Model Statute, a committee of the Boston Chamber of Commerce reported in November, 1915:

"The result of this investigation showed almost without exception that laws of this nature where they have been enacted have proven successful.

"According to the testimony of many district attorneys there have not been many prosecutions under the law. The very fact that it becomes known that such a law is on the statute books serves to suppress much of the untrue and misleading advertising which previously appeared in those states."

The legality of the "Printer's Ink" Model Statute has been several times attacked, but in every case the lower courts have declared the law valid. Judge Brooks of Minnesota states that legislation "providing for the detection and prevention of imposition and fraud has been repeatedly sustained by the United States courts." He states that the Federal Supreme Court has held "that police power embraces regulations designed to promote the public convenience of the general prosperity, as well as regulations to promote public health, public morals or the public safety." Judge J. Alexander in the case of *State of Ohio vs. Charles Schaengold*, in the Municipal Court of Cincinnati, June, 1915, said in regard to the Model Statute: "Advertising having come to be considered as a necessary part of a merchant's business, the Leg-

islature, in the opinion of the Court, had a right to pass laws for the purpose of keeping it clean and no honest man, be he buyer or seller, ought to complain. Laws providing for the detection and prevention of imposition and fraud, as a general proposition are free from constitutional objection and this law in question comes under this head."

There is only one case on record where the question of the constitutionality of this law has been carried up to a higher court—the case of *Jasnowski vs. Connolly* in Michigan (June 2, 1916, laws of 1913) and this resulted in a refusal by the Court to declare the Model Statute unconstitutional.

The Druggists and Proprietaries.

A special investigation was recently made by L. C. Scott, Ph. D., M. D., of the Louisiana State Board of Health, into the question of the sale of patent or proprietary remedies. In New Orleans and three other cities 211 stores were visited.

The results of the investigation are summarized in the *Quarterly Bulletin* of the State Board of Health, as follows:

There are a certain number of patent and proprietary remedies which each drug store is compelled to carry in stock, and the number varies with the size and locality of the store.

Of about 100 of the more common patent medicines 28 to 30 are in more or less constant demand. Of these latter only about 18 to 20 make up almost the entire income of the store from patent medicines, and amount to about 29 per cent of total sales.

The majority of pharmacists are opposed to patent medicines on ethical grounds, but they are compelled by public demand to carry them.

From information, acquired through conversation with many pharmacists, it appears there is only a narrow margin of profit after expenses are paid, and any accumulation of profit is due to large and continued sales.

While as a whole pharmacists are opposed to patent medicines, many regard the proprietary (meaning those with formulae on the package) as equal and often superior to properly written prescriptions and as the only means for the poor man to get his medicine.

The opinion of the pharmacists is divided on the question of whether a drug store could exist without the sale of patent medicines or proprietary remedies. Many seem to hold the opinion that it would be possible if all were of the same mind.

So-called "unethical business" of certain pharmacists, such as counter prescribing, cutting rates, "pushing" certain lines, and advertising, injures others not able, or not willing, to do this; and in this "unethical business" patent medicines have become a large and important factor.

The public demand for patent medicines varies with localities, being proportionately greater the more rural the population: and ignorance and its necessary accompaniment, lack of the critical sense, is responsible. In the larger places, such as Shreveport, it would appear that proprietary medicines are more called for in prescriptions, and there is less counter prescribing. It is, however, difficult to obtain a clear insight into this phase of the patent medicine trade.

The sale of patent medicines is mainly dependent on newspaper advertisement, and were it possi-

ble to suppress this, probably 75 to 80 per cent of the demand would cease. It would prevent the loss which a druggist bears when a certain remedy ceases to be popular and leaves him with worthless stock on hand.

Physicians as a rule look upon many proprietary remedies as excellent, more efficacious, and certainly more palatable medicines than were the same ingredients compounded from a prescription by the druggist. Physicians in general can hardly be made responsible for the sale of patent medicines, though some pharmacists assert this to be the case.

All efforts toward minimizing the patent medicine evil, must strike at the newspaper advertisement first, then aim toward obtaining co-operation and correlated action from the druggists, through local or state organizations. The fact that much professional jealousy and commercial antagonism appears to exist among the pharmacists would, however, make this difficult.

Finally, the patent medicine trade is going through what might be termed a process of evolution, chiefly due to the effects of the Food and Drug Act, and proprietary (those with known formulae) remedies are the result of this process. Another factor is the increase in public intelligence, and power of discrimination. Furthermore, while the true patent medicines may actually be a burden and nuisance to the progressive and enlightened pharmacist, as well as a public swindle, they must eventually disappear or be replaced by remedies whose composition is no secret.

Use of U. S. Liquid Measure Illegal in Canadian Trade.

A ruling by the Canadian inland revenue authorities in regard to liquid measures should be carefully noted by American manufacturers engaged in trade with Canada.

The United States gallon is approximately 20 per cent smaller than the Dominion gallon; more exactly, the Imperial gallon in use in Canada is equal to 1.2009 United States gallons. Many complaints have been made in Canada as to the sale of bottled and tinned goods, such as ink, essences, condiments and paints put up by American houses according to the United States or wine measure unit. American goods measured by the smaller unit have an unfair advantage over similar Canadian goods.

Inspectors, dealers, manufacturers and all others concerned are therefore advised: that the sale of anything in Canada by wine measure is illegal; that the offering for sale of any goods of which the contents are clearly marked in some unit of United States measure, e. g., "1 Pint U. S. A. Standard," is illegal; that representing unmarked containers of goods as pints, quarts, etc., when their contents are actually United States measure (wine measure) is illegal.

Goods in packages and containers may be put up and sold without any reference to the measure of the contents, or the contents may be indicated by weight in pounds or in ounces, but if any reference whatsoever is made to the contents by measure, it must be in Dominion measure only.

The weights and measures act of Canada prescribes the use of certain Dominion weights and measures, or the metric system in all dealings in Canada. Fines are provided for selling goods according to any standard other than those stated above.

A Year's Perspective In Food

By CHARLES RYAN
of the U. S. Food Administration.

AMERICA is entering upon a new era in her career as food provider for the allied world.

We have passed over more than one year of war; have weathered a distressing season of short harvests; from our scanty bins have saved enough to keep the wolf from the Allied doors; and now can glean a ray of encouragement from the crops with which patriotic application, careful supervision and favorable weather have blessed us.

The year which has passed gives us a perspective by which to measure our views of the new demands which come to us now that our larder has been replenished. Our crops have been large. We find ourselves in the midst of plenty. In our people has been awakened the sacrificial spirit with which they must share the allied war burden. It is this spirit that must keep our people from allowing this period of comparative plenty to precipitate an era of extravagance.

It is possible to lighten many of the restrictions which have been placed upon our eating habits. It is possible to relax some of the regulations which helped to attain the conservation that maintained Allied strength through the past year. But we must remember that the demands from across the sea will steadily increase. Our exports this year must be much greater than they were last year. Conservation must be our watchword at every meal, every day, in every home.

Last year we accomplished the almost unbelievable. We entered the harvest year with a food deficit. From a nutritional standpoint, our crops have been from 7 to 9 per cent below normal—and we must remember that in years of plenty the United States has never been a heavy exporter of foodstuffs. And yet from our meager store we have shipped 10,000,000 tons of foodstuffs to the European Allies. Most remarkable of all, we have shipped 140,000,000 bushels of wheat. We entered the year with a surplus of only 20,000,000 bushels above the normal needs of our own people for home consumption. That means that 120,000,000 bushels were saved from American tables.

This year we have had good crops. Fortunately, we do not begin the new harvest season confronted by a deficit. But, on the other hand, we have a hard road laid out for us. We know that our exports must be heavily increased if the Allies are to be kept in the war. We have hundreds of thousands of our own men across the sea, and they must be fed.

Under normal conditions, we supplied about 10 per cent of the food deficit in the Allied countries. Last year with a greater deficit than has ever been known in Europe, we filled 50 per cent of that food vacuum. Last year we sent 10,000,000 tons of foodstuffs. This year that amount must be increased by at least one-half.

We must all recognize the fact that even with heavy crops, conservation in this country must not, can not, be cast aside if the German offense is to be swept back across the Prussian border. The Allies have now had four years of war. In those four long years of sacrifice and privation they have learned much regarding the substitution of one food for another. Their education along this line will make it possible for America to send a more varied exportation than was possible last year, when the Allied demand centered upon wheat and beef. We will be able to send them a variety of cereal foodstuffs and to specialize less in the exportation of specific commodities.

Knowing that the American people would appreciate this situation and that they could be relied upon to respond gladly to any request prompted by the needs of the European Allies, the Food Administration of the United States, at a conference with the food controllers of the Allied governments, lent its approval to a universal cereal program which places all the countries united against Germany on a basis of equality. This new program assures all of these peoples a bread which will contain no more than 20 per cent of wheat substitutes. This is even better than we have had in this country since April 14. Commercial bakers were required to use 23 per cent of wheat substitutes in all breads. This will prove a boon to the civil population of European Allied countries. In the past four years they have suffered more than we can understand for want of wheat. At times these people have had to live almost wholly on black, unpalatable breads which often contained no wheat at all. At times they have been on a basis of 70 per cent wheat substitutes.

With the heavy demands which must be made upon us for staple foodstuffs, we can easily appreciate the imperative necessity for continued and increased conservation. We are pledged to send at least 15,000,000 tons of our available foodstuffs to Europe during the coming year. Every possible source of waste must be eliminated. Every ounce of food must be required to do full duty. No morsel can be wasted. We must practice the gospel of the clean plate.

The foods which have come to be regarded as staples in our diet represent about 95 per cent of our total food resources. It is these staples which must be saved. It is from these that we must build up our exports. That leaves only about 50 per cent of our resources upon which we can fall back for substitutes. With this narrow margin, it would be almost criminal for us to use any foodstuffs prodigally. Of course, some of the staples are better adapted to export than others; we will be able to have some in greater abundance than others. But every pound of nonperishable foods that we can save must be sent to Europe.

Food Administration Activities Praised.

Senator Oscar W. Underwood of Alabama recently gave out the following statement concerning the activities of the Food Administration:

"One year ago, on August 10, 1917, Herbert Hoover was appointed Food Administrator by President Wilson, and the Food Control Act, under which he has worked ever since, became a law.

"In a world unsettled by the chaos of war he undertook a task of colossal difficulty and has achieved remarkable results. While I have always had the utmost faith in the Food Control Act as a war measure, I frankly admit that Mr. Hoover has far surpassed my expectations in the good he has accomplished.

"He got to work at once; he stimulated food production, regulated distribution, did away with hoard-

ing and speculation, established just margins of profit for dealers and kept up a flow of exports from our shores that tided the Allies over dreary months when their fate hung in the balance, and with it the fate of the cause for which we are now fighting with them.

"The Food Administration is to be especially congratulated upon the manner in which it enlisted the whole population of the Nation in its service. To tell 100,000,000 people, far from the actual seat of war, to change entirely their habits of eating is a step that seemed almost revolutionary in our country. Yet the response was instantaneous and wholehearted.

"America's womanhood has been especially willing to serve, both in the home and in performing community duties having relation to food conservation. Hundreds of thousands of homes were put on an absolutely wheatless basis last spring, when the Allies had to have wheat to go on. The adaptability of the American housewife who used wheat, meat and sugar substitutes, under the direction of the Food Administration, is as fine a quality as any brought out by the war itself. It stood for true self-sacrifice.

"I have admired particularly the flexibility of the food program. A thousand adverse conditions have had to be met; drought and flood and unforeseen weather that destroyed crops, impeded transportation and threw out the finest calculations; submarine sinkings that cut off various commodities before they reached Allied shores; sudden demands from Europe for particular foodstuffs, the sending of which meant change in the diet of the American home, which had to go without; and the necessities of our own constantly expanding military organization which is increasing consumption of food tremendously and leaving fewer men in the fields to produce it.

"The Food Administration has met all these emergencies in a manner which has excited my admiration and that of every true American, as well as of the nations in Europe that have benefited by its activities. When the whole story of the war is told, I do not doubt that the chapters dealing with the great food adventure undertaken by Herbert Hoover will be among the brightest that illumine the pages of our history."

Food Controllers of Allied Countries Adopt Resolution.

The Food Controllers of the United States, France, Italy and Great Britain adopted the following resolution at a conference in London recently. The resolution, which was cabled to the United States Food Administration, emphasizes the necessity of building up reserves in North America as an insurance against possible crop failures here and elsewhere and the diminution of agricultural labor.

"Resolved, that while the increased production of the United States renders it possible to relax some of the restrictions which have borne with peculiar hardship upon all our peoples, yet it is absolutely necessary that rigid economy and elimination of waste in the consumption and handling of all foodstuffs, as well as increased production, should be maintained throughout the European Allied countries and in North America. It is only by such economy and elimination of waste that the transportation of the necessary men and supplies from North America to the European front can be accomplished, and that stocks of foodstuffs can be built up in North America as an insurance against the ever-present danger of harvest failure and the pos-

sible necessity for large and emergency drafts to Europe. We cannot administer the food problem on the basis of one year's war. We must prepare for its long continuance if we are to insure absolute victory."

Before the war, only about 10 per cent of the food deficit in the Allied countries was provided by America. Approximately 50 per cent of the Allied deficit was filled last year by the United States and Canada. And from the 1918 crops this country will very probably be called upon to supply a much larger proportion of this ever-increasing European deficit.

About 1,500,000 tons of shipping could be saved if it were made possible to withdraw ships now taking to Europe food from Australia, India and South America. If this were done, it would be possible to transport and maintain in France a much larger army of American soldiers. Many of the difficulties of convoy could be overcome if the bulk of shipping plied the single lane between Europe and North America. Interpreted in terms of men on the fighting front, every ship diverted from Australia could perform an equivalent service from American ports and in the time it had taken for one round trip from Europe to Australia, could make two additional trips from Europe to the United States. In other words, it could furnish Europe with the same amount of food and in the same length of time could make one trip as a troop ship and another to transport additional food.

With men leaving our farms in ever-increasing numbers to engage in direct war work, probably this year will show the height of our agricultural production. To protect this country and the Allies against the inevitable shortages of the future, this year's production must be taken advantage of to lay by reserves.

Although public eating places and households which voluntarily went to a no-wheat basis earlier in the year have been released from their promise to forego entirely the use of wheat, they must still practice economy. Release from their pledge only places them on the same basis as the rest of the American people. Probably as long as the war lasts they must use victory bread. They must face as rigid economy in other directions. Especially is this true at present in the case of sugar. The American people as a whole were called upon to adopt on August 1 an honor ration of two pounds of sugar per person per month.

Wheat Conservation Program.

The recent careful survey by the Food Administrators of the United States, France, England and Italy of the food resources of the 220,000,000 people fighting against Germany, shows that, to maintain enough supplies and necessary reserves against disaster, there must be maintained in all countries a conservation of wheat flour during the coming year.

It has been agreed that the wheat bread of the Allies shall contain 20 per cent of other grains than wheat, and it is only just that this country should bear a share in this saving and that the bread at least should be universal with those who are suffering more greatly from the war than the people here.

Distribution and transportation circumstances in the United States render it necessary to rely very largely on the voluntary action of the homes to enforce this mixture. The "Victory Bread" made is wholesome and there is no difficulty in preparation. The mixtures outlined below are for wheat bread and the saving of wheat flour, but they are not intended to displace the large use of corn bread. This mixture must be used

with wheat flour in addition to the normal consumption of corn bread.

For this purpose, regulations were formulated which became effective September 1, providing, first, for the preparation and marketing by the manufacturing and distributing trades of the country of a mixed flour complying with the international policy, which will be available for purchase by the household; second, in regulations covering the case where straight wheat flour is sold by retailers, that at the same time 20 per cent of other cereal flours must be sold coincidentally; third, requiring that all bakers' bread shall contain 20 per cent of other cereals, and the Food Administration relies upon the householders of the country to mix at least 20 per cent of the substitute cereals into the wheat flour at home for all uses. Corn meal for the use of corn bread should be purchased separately from combination sales.

It is desired to insure a supply of ready mixed flours on the market, and to have millers and dealers of all kinds encourage the use and sale of this flour so that the country may be on a mixed flour basis without the necessity of retailers making combination sales of flour and substitutes.

All such mixed flours made according to the following regulations should be labeled "Victory Mixed Flour," and are to be labeled with the ingredients in order of their proportion. The flours so mixed must be milled in accordance with the standards of the United States Food Administration. No "Mixed Flours" (except pancake flours) shall be made or manufactured except in the exact proportions as outlined below:

Mixed wheat and barley flour shall be in the proportion of four pounds of wheat flour to one pound of barley flour.

Mixed wheat and corn flour shall contain the proportion of four pounds of wheat flour to one pound of corn flour.

Mixed wheat, barley and corn flour shall contain the proportions of eight pounds wheat flour to one pound barley and one pound corn flour.

Mixed wheat and rye flour shall contain the proportion of three pounds of wheat flour and not less than two pounds of rye flour.

Whole wheat, entire wheat, or graham flour or meal shall contain at least 95 per cent of the wheat berry.

All the above "Victory Flours" may be sold without substitutes, but at no greater price from the miller, wholesaler or retail dealer than in the case of standard wheat flour.

The new regulations supersede the 50-50 rule. The retail dealer selling standard wheat flour is required to carry in stock either barley flour, corn meal or corn flour, and with every sale of wheat flour must sell a combination of some one or more of these in the proportion of one pound of substitute to each four pounds of wheat flour. No dealer may force any other substitutes in combination upon the consumer, and these substitutes must conform to the standards fixed by the United States Food Administration.

There are some localities where other substitutes are available and which retailers may wish to carry. In order to meet this situation the following flours may be sold in such combination in lieu of the above flours if the consumer so demands, at the ratio of one pound to each four pounds of wheat flour; that is, feterita

flour and meals, rice flour, oat flour, kaffir flour, milo flour, peanut flour, bean flour, potato flour, sweet potato flour and buckwheat flour. Pure rye flour or meal may be sold as a substitute, but must be sold in proportion of at least two pounds of rye with three pounds of wheat flour.

The foregoing rules apply to all custom and exchange transactions as well as sales of flour to farmers unless modified by special announcement of the Federal Food Administrator of the state where the mill is located, acting with the approval of the Zone Committee.

In compliance with the general situation above, the following alterations are made in the rules and regulations governing the baking trade:

Rule 1-A. The consumption of wheat flour in bakery products not to exceed 70 per cent of the 1917 consumption is hereby rescinded.

Rule 2-A. Wheat flour substitutes for bakers remain as heretofore with the exception of rye, which will be a substitute when used upon a basis of not less than 40 per cent, which is two pounds of rye flour to every three pounds of standard wheat flour. When rye is used in this proportion or a greater proportion, no other substitutes are required. If less than this proportion of rye flour is used the difference between such amount used and 40 per cent must be made up of other substitutes.

Rule 6-A. Bakers will be required to use one pound of substitutes to each four pounds of wheat flour in all bakery products including bread, except Class 3a—Crackers, in which only 10 per cent of substitutes other than rye are required.

The use of the name "Victory" will be allowed in all products containing the above proportions of substitutes.

The previous rules limiting licensees, millers, wholesalers, retailers and bakers to thirty days' supply of flour will be changed to permit a sixty days' supply.

The rules limiting sales by retailers of wheat flour to an eighth of a barrel in cities and a quarter of a barrel in sparsely settled districts are rescinded.

The rule limiting the sale of flour by millers to wholesalers, or wholesalers to retailers, in combination with substitutes or certificates therefor, and the rule restricting the sale to 70 per cent of previous sales, are rescinded.

Manufacturers of alimentary pastes and wheat breakfast foods are limited to their normal consumption of wheat or wheat flour with the understanding that they are not to unduly expand their ordinary consumption of wheat.

Rules prohibiting the starting of new plants ready for operation prior to July 1, 1918, are rescinded.

Where millers sell directly to consumers they shall obey the same regulations as retail store dealers.

Wheatless days and wheatless meals are discontinued.

Nothing in these regulations is to be construed to mean that there has been any setting aside or changing of the Pure Food Laws as promulgated by the Bureau of Chemistry, Department of Agriculture, or the Internal Revenue Law as administered by the Internal Revenue Commissioner, which requirements must be conformed to by manufacturers and dealers in all cases.

RETAIL PRICES,

Average price per pound	Average price per 100 calories		Lima, Ohio (Typical small town)	Augusta, Me.	Burlington, Vt.	Boston, Mass.	Buffalo, N. Y.	Trenton, N. J.	Pittsburgh, Pa.	Washington, D. C.	Cincinnati, Ohio	Cleveland, Ohio	Columbus, Ohio	Indianapolis, Ind.	Lexington, Ky.
CEREAL PRODUCTS															
6.6	.41	Wheat Flour, War Std., 49-lb. bag	320	340	330	330	305	320	310	350	340	320	320	310	320
7.5	.47	Rice Flour, Std., 24½-lb. bag	200	200	.....	165	159	245	165	160	150	190	.....	145	25
7.3	.45	Graham Flour, 10-lb. bag	70	70	80	70	70	90	70	70	70	50	65	.....	8
11.8	.72	Corn Starch, lb.	12	12	15	10	10	12	9	11	15	10	13	10	1
7.9	.50	Corn Flour, 5-lb. bag	40	40	40	35	35	40	40	37½	35	7	35	35	4
6.4	.40	Corn Meal, lb.	6	7	5	6½	7	7	6	6	6	7	6½	7	.....
7.7	.47	Barley Flour, lb.	8	8	8	6	7	7	7	8	7	8	.....	.....	.....
9.1	.53	Oatmeal, lb.	10	8	.....	7	7	8	9	6½	7	8	.....	8½	1
8.6	.48	Oats, Rolled, bulk, lb.	9	8	7½	7	8	8	8	12	7	8	.....	8½	1
12.8	.78	Rice Flour, lb.	15	16	18	13	13	14	11	12	12½	12½	14	15	1
10.9	.69	Buckwheat Flour, lb.	10	.....	.....	.....	8	10	.....	10	.....	10	.....	14	1
9.8	.61	Hominy Grits, lb.	11	15	.....	8½	10	8	12	10	7	.....	.....	8	1
10.6	.59	Quaker Oats, 20 oz.	14	13	12	10½	13	11	11	8	12	12	14	15	1
14.0	.88	Rice, Fancy Head, lb.	15	14	15	12½	15	15	12½	12	14	15	14	14	1
13.1	.81	Barley, Pearled, lb.	15	.....	15	10	10	8	9	10	10	12	.....	.....	2
9.9	.84	Bread, lb.	10	10	15	8	10	9	9	8	10	10	10	10	2
23.0	1.21	Crackers, Graham, lb.	22	22	25	22½	25	26	25	15	20	22	40	22	2
22.9	1.19	Crackers, Oatmeal, lb.	22	.....	25	21	25	25	25	15	20	22	40	.....	2
14.9	.91	Macaroni, lb.	15	20	15	16	13	14	12	18	15	12½	16	.....	2
SUGAR AND SYRUP															
9.5	.53	Granulated Sugar, lb.	9½	10	9	9	9	9	9	9	9½	9½	9½	9½	1
8.8	.61	Corn Syrup, 10-lb. pail	90	90	85	.....	95	75	90	90	75	85	.....	80	9
30.2	2.04	Comb Honey, lb.	30	35	.....	.....	38	30	25	35	35	35	36½	30	.....
MISCELLANEOUS															
30.4	1.35	Cocoa, bulk, lb.	35	.....	.....	29	23	.....	25	30	25	35	50	27	.....
33.9	5.65	Eggs, Fresh Gathered, firsts, doz.	45	38	10	67	65	80	52	49	48	55	46	46	4
6.5	2.09	Milk, qt.	12	12	.....	15	14	14	13	13	13	13	13	12	1
35.5	1.70	Cheese, American, Cheddar, lb.	35	33	35	32	32	35	33	38	35	32	36	36	4
FATS															
56.5	2.38	Bacon, Sliced, lb.	60	50	60	52	60	60	50	45	55	44	60	55	5
54.6	1.56	Creamery Butter, Fancy, lb.	55	58	55	56	54	58	52	58	55	55	55	53	6
33.6	.82	Pure Leaf Lard, lb.	35	34	35	40	32	32	32	30	32	32	.....	35	3
35.6	1.04	Oleomargarine, Uncolored, lb.	35	36½	35	36½	35	36	30	35	35	28	36	36	3
34.7	.99	Nut Margarine, Uncolored, lb.	35	36½	35	32½	33	35	32	25	35	30	36	35	.....
108.5	2.71	Italian Spanish Olive Oil, qt. tin	250	250	250	215	160	280	200	200	200	.....	375	325	150
37.9	.91	Cottonseed Oil, qt. tin	85	.....	85	80	75	60	90	70	60	60	150	.....	.....
40.9	1.22	Corn Oil, qt. tin	75	75	75	65	75	75	80	70	75	.....	35	65	.....
43.3	1.08	Peanut Oil, qt. tin	75	.....	.....	.....	.....	100	120	90	.....	.....	50	.....	.....
29.4	1.07	Peanut Butter, lb.	30	28	25	25	25	24	25	35	35	25	.....	30	30
FRUITS															
21.3	1.61	Evaporated Apples, lb.	25	25	.....	26½	21	25	.....	30	20	.....	.....	15	.....
18.4	1.53	Evaporated Peaches, lb.	20	20	.....	25	16	24	15	25	20	16	.....	15	.....
15.9	7.57	Canned Peaches, No. 2½, Std., 29 oz.	35	25	30	45	25	33	25	25	25	30	38	33	35
16.9	2.33	Canned Pineapples, No. 2½, Std., 30 oz.	35	30	35	35	35	38	27	32	25	35	38	35	40
16.2	1.04	Raisins, Seeded, pkg., 15 oz.	15	15	15	14	15	15	15	15	15	15	18	15	15
17.6	1.51	Prunes, Medium Size, lb.	20	16½	16	18	18	18	16	18	15	18	23	15	20
VEGETABLES															
4.1	1.37	White Potatoes, lb.	4	3½	5	4	3¾	3	3⅓	4	4	5	4	4½	4
8.5	1.89	Sweet Potatoes, lb.	12	.....	10	10	.....	8	8	12	8	8	10	10	12
5.2	2.60	Onions, lb.	8	5	8	4	5	7	6	7	5	5	4	5	6
17.2	1.09	Navy Beans, Dry, lb.	17	17	18	15	18	18	17	17	16	15	18	18	18
15.2	16.88	String Beans, Cnd., No. 2, Std., 19 oz.	20	18	10	18	21	18	20	20	15	25	.....	18	20
14.3	3.25	Corn, Cnd., No. 2, Std., 20 oz.	15	22	22	20	15	18	18	20	15	20	15	20	20
15.1	6.04	Peas, Cnd., No. 2, Std., 20 oz.	18	17½	22	17½	15	18	18	18	15	30	18	20	25
15.7	.98	Split Peas, lb.	15	14	18	13	18	20	12	15	12	15	18	.....	.....
24.8	1.33	Peanuts, Unshelled, lb.	25	.....	25	25	40	25	25	.....	25	.....	.....	.....	30
9.4	9.40	Tomatoes, Cnd., No. 3, Std., 33 oz.	20	23½	25	25	17	23	20	18	20	25	20	25	20
4.9	4.08	Cabbage, lb.	5	3	5	3	4	4	5	5	5	4	5	6	6
4.3	2.53	Beets, lb.	4	4	5	3½	3	6	5	8	3	5	2½	.....	4
4.6	2.56	Turnips, lb.	9	3	5	5	5	5	5	.....	3	.....	.....	.....	.....
MEATS AND FISH															
37.6	5.78	Beef, Round Steak, lb.	40	52½	55	50	38	48	30	45	30	32	37½	42	40
44.4	8.88	Veal Cutlets, lb.	45	50	60	57½	38	60	45	50	45	40	40	50	50
35.5	4.08	Leg of Mutton, lb.	40	.....	45	30	.....	40	45	35	25	22	35	70	.....
40.8	4.86	Leg of Lamb, lb.	45	46½	50	38	38	40	45	45	35	32	40	70	50
41.8	3.40	Pork Chops, lb.	40	48	40	45	46	38	38	50	40	40	35	42	40
54.6	2.87	Ham, Sliced, medium fat, lb.	60	50	60	48	60	50	50	50	60	42	52½	55	50
46.1	15.90	Chickens, Broilers, lb.	50	50	60	47½	50	55	50	50	45	45	40	38	65
28.9	8.08	Salt Cod, lb.	25	30½	28	28	22	.....	26	30	20	25	.....	.....	.....
25.6	2.56	Salt Mackerel, lb.	25	.....	.....	25	32	28	20	25	25	35	.....	.....	20
32.6	7.24	Halibut, lb.	35	35	35	38	32	45	32	35	30	30	.....	.....	35
32.8	5.13	Salmon, lb.	35	45	50	37½	32	45	35	40	25	30	.....	.....	30
29.3	4.44	Salmon, Cnd., No. 1 tall, 1 lb.	30	30	30	29	30	28	25	30	30	32	45	35	30
29.4	7.95	Trout, lb.	38	.....	.....	75	28	.....	25	20	30	30	.....	.....	.....
25.8	8.06	Whitefish, lb.	30	.....	.....	18	28	.....	28	25	.....	25	.....	.....	30

TEMBER 1, 1918

	Nashville, Tenn.	Memphis, Tenn.	Birmingham, Ala.	Tallahassee, Fla.	Montgomery, Ala.	Agricultural College, Miss.	New Orleans, La.	Little Rock, Ark.	Chicago, Ill.	Madison, Wis.	St. Paul, Minn.	Lincoln, Nebr.	Topeka, Kans.	Denver, Colo.	Tucson, Ariz.	Reno, Nev.	Los Angeles, Cal.	Berkeley, Cal.	San Fran- cisco, Cal.	Portland, Ore.
10	315	.....	343	380	330	.....	392	325	310	295	330	310	310	255	330	310	307	320	310	310
75	.....	.....	196	190	.....	.....	196	.....	160	135	165	200	195	140	195	225	161	180	180	220
13	65	.....	100	80	.....	90	80	.....	70	65	65	78	80	65	70	75	61	75	75	70
38	10	9	10	24	15	12	14	11	10	9	12	12	10	12	10	15	11	10½	11	12½
6	40	35	.....	45	40	.....	40	35	38	33	40	32	35	40	40	45	37	40	41	40
8	5¼	5½	5	5	6	5	7	6	6½	6½	7	6¼	6	6	7½	9	6¾	7½	8	8
8	6	.....	.....	8½	.....	.....	10	7	7	6½	8	8	7	7½	8½	10	7¾	8	8	8
.....	.....	.....	7½	.....	.....	.....	7½	10	10	7½	9	8½	.....	15	.....	11	9½	10	10	8½
13	7½	.....	7½	.....	.....	.....	12½	10	8	7½	9	.....	8	10	.....	11	8	8½	8½	8½
10	.....	.....	.....	.....	12½	.....	10	15	13	12½	12½	12½	12½	15	15	15	10	12½	12½	11
7	7	6	6	7½	7½	7	7	7	7	10	10	8	7	17½	12½	10	8½	9	9	9
15	11	11	12½	15	15	12½	12½	12	12	13	12	12	15	15	15	15	12½	15	14½	12½
.....	14	.....	12½	14	14	12½	12½	14	13	15	15	12½	13	15	17½	13	15	14	14	12½
15	.....	10	18	.....	.....	.....	10	17	12	13	10	19	10	15	20	14	10	12½	12½	15
10	10	10	10	10	.....	10	12	10	9	9	8	9	15	9	10	10	12	8	8	10
25	.....	.....	31	40	.....	20	20	25	22	20	22	18	20	20	15	20	20	22½	23	23
20	.....	.....	31	40	.....	20	20	25	22	20	22	18	20	20	15	20	20	22½	22½	25
20	.....	14	12	20	10	15	12½	12	15	13	15	12	15	25	15	14	11	12½	13	12½
9½	9	9	9	10	9½	10	9	9½	9	9	10	10	10	9½	9½	10	9	9	9	10
10	75	67	80	.....	100	75	90	70	75	85	85	87	85	105	100	105	81	90	90	110
25	40	30	25	25	25	15	35	25	30	35	.....	35	28	35	.....	20	30	25	27½	35
.....	25	.....	25	50	.....	.....	40	35	25	35	30	22	28	25	.....	40	23	25	28	25
55	47	50	47	45	50	40	50	53	51	44	45	42	39	50	60	74	56	58½	57½	55
17	16	15	.....	15	15	.....	15	20	13	10	10	12	12	12	15	15	14	12	13	15
40	32	40	30	35	40	35	35	34	35	34	32	38	37½	40	37½	35	32	40	32½	35
65	42	58	50	60	60	50	55	55	53	60	50	50	60	60	65	65	63	62½	65	60
55	55	51	55	60	55	50	26	53	53	50	51	52	51	55	60	66	58	56	57	59
35	31	32	30	35	33	32	32	34	33	33	33	35	35	35	35	35	30	34	35	35
40	35	28	35	45	.....	.....	37	35	35	34	36	27	35	35	.....	42	35	38½	38	40
40	35	.....	35	.....	40	.....	35	35	35	34	33	34	35	36	.....	.....	33	38	38	35
300	200	.....	143	240	.....	.....	175	145	150	225	150	213	165	250	190	195	214	150	150	.....
100	70	59	68	60	75	.....	60	39	70	75	75	75	85	100	50	96	46	45	45	85
.....	65	.....	.....	80	75	.....	60	39	70	75	75	85	75	75	85	79	65	50	50	80
85	.....	.....	.....	100	.....	.....	65	40	75	75	.....	75	.....	125	.....	.....	.....	.....	.....	.....
40	25	.....	30	30	35	35	30	25	25	30	25	22	25	50	35	30	28	30	30	25
20	.....	17	18	25	20	17½	20	19	25	20	.....	20	.....	20	20	17	20	20	20	17½
20	14	14	15	20	20	17½	20	18	18	18	.....	16	17½	27½	25	12	18	15	15	15
30	25	26	22½	30	30	25	25	25	30	32½	25	26	30	35	30	25	21	25	25	30
30	25	.....	35	30	.....	35	25	20	30	34	25	33	35	33	30	30	27	25	25	25
18	13	13	15	26	18	12½	15	15	15	16	12½	15	15	15	15	14	13	12	12	12½
20	22	16	15	20	.....	17½	17½	18	18	18	15	16	17½	20	20	14	16	15	17½	12½
5	4½	4	4½	5	5	4	4	4	3½	3	2½	3½	2½	4	4	3	4	5	5	4
10	9	6	7½	3½	5	4	6	8	8	.....	.....	10	8	15	7½	12	5	6	8	8½
7	4	4½	7½	7	6	5	6	6	5	5	3	6	4⅓	5	4	3	3⅓	3	4	4
20	15	14	15	20	20	17½	17	15	18	13	18	17	16¼	20	17½	17	15	16	17	12½
20	15	15	13	15	20	17½	20	20	20	20	15	16	20	25	20	15	13	14	15	20
25	20	15	21	15	20	20	20	20	20	20	15	14	15	17½	17½	15	14	12	12	20
20	20	15	20	20	25	20	18	20	20	16	15	15	20	22½	17½	20	13	15	15	20
20	17	.....	.....	.....	.....	.....	15	10	15	15	15	19	.....	20	15	15	12	15	15	15
.....	25	.....	12½	15	.....	.....	.....	15	25	25	30	18	.....	25	.....	30	23	30	30	22½
25	17	18	20	.....	15	20	18	20	23	24	18	19	20	20	17½	15	16	13	12½	15
10	5½	5	6¾	7	6	6	3	7	3	2	.....	5½	5½	4	8	3	5	1⅓	1½	4
.....	.....	.....	7½	.....	10	.....	5	7	2	3	3	4	4½	2	5	3	.....	1¼	1¼	5
6	.....	.....	10	6	10	.....	5	6	2	2	3	4	4¼	2	5	3	.....	1¼	1¼	5
45	35	38	40	25	35	35	35	40	32	35	35	30	40	45	35	32	30	35	35	25
55	35	37	50	.....	40	35	40	35	35	35	35	35	40	60	40	40	65	30	32	30
40	40	35	40	25	35	35	35	35	28	30	32	28	40	35	40	25	.....	30	30	30
45	40	35	50	25	.....	35	40	45	40	40	35	34	45	40	.....	35	35	35	38	35
45	42½	40	44½	30	45	40	45	40	45	40	40	36	40	45	45	42½	40	45	45	45
65	40	50	50	50	80	50	50	55	50	50	50	58	60	65	55	60	55	60	60	55
55	47½	45	50	.....	35	30	42	45	38	42	38	33	40	50	45	50	50	50	50	45
.....	.....	20	.....	.....	.....	.....	29	40	30	30	.....	32	30	40	35	42	24	25	25	.....
35	.....	15	.....	.....	25	20	20	35	25	25	.....	25	30	30	.....	15	22	25	25	.....
.....	.....	25	.....	.....	.....	.....	50	35	30	31	30	35	30	35	.....	30	17½	30	30	25
50	.....	30	.....	.....	.....	30	25	30	30	30	30	33	26	40	.....	30	30	22½	22	22½
35	24	28	25	17½	40	30	25	30	30	35	.....	28	30	25	.....	30	.....	28	28	20
.....	25	25	.....	23	.....	.....	20	40	28	37½	22	32	.....	35	.....	50	.....	10	10	.....
.....	.....	25	.....	.....	.....	.....	12½	35	27	30	20	25	.....	40	.....	50	.....	8	8	.....

The Health Officer and the Big Fight.

It is said to take nine men working "over here" to keep one soldier fighting "over there." Clearly, therefore, it is wise to keep the nine workers husky and working as well as the one soldier.

Which health officer should stay at home and who should go to war? How is the nation bearing up under the war strain? What are the special war-time health menaces of the civil population, and what are we going to do about them? What headway are we making against the venereal diseases? These are the questions to be considered at the convention of United States and Canadian sanitarians at Chicago, October 14 to 17, to be held under the auspices of the American Public Health Association. Some of the military sanitarians who will address the meetings are Surgeon General Gorgas, Colonel Victor C. Vaughan, and Major William H. Welch of the Army Medical Corps. Other speakers at the general sessions will be George H. Vincent, president of the Rockefeller Foundation; Dr. Charles J. Hastings, president of the American Public Health Association; Dr. W. A. Evans, Assistant Surgeon General, Allan J. McLaughlin, U. S. P. H. S.; Dr. Ernest S. Bishop, Dr. Lee K. Frankel, Dr. Frederick L. Hoffman and others.

There will also be papers upon laboratory, industrial hygiene, vital statistics, food and drugs, sanitary engineering, sociological and general health administration subjects.

As the health of the civil population has a direct bearing upon the winning of the war, mayors and governors are being requested to send their health officers to the conference in spite of the present high cost of government.

The final program will appear in the American Journal of Public Health appearing September 25. For further information write to A. W. Hedrich, secretary, American Public Health Association, 1041 Boylston Street, Boston, Mass.

Canada Food Saving Producing Results.

The Canada Food Board recently issued a summary of the results of the special food production and conservation efforts in the Dominion. This statement was accompanied by an appeal to the public to continue the conservation of wheat, meat, dairy products and sugar.

"The results which have already been obtained show the importance of small individual food saving, when multiplied by hundreds of thousands," the Food Board states. "In the case of pork, Canada and the United States have been able to meet the Allies' requirements for the present, but it must not be assumed that our task is complete. It is still true that all food production and food saving will count for victory."

The summary of what Canada has done to help feed the armies and the civilian population of the Allies shows that net exports from Canada of beef have been increased by nearly 75,000,000 pounds per annum, an increase of 6,795 per cent over the average net exports for 1910 to 1914. Net exports of pork have been increased by 225,000,000 pounds per annum, an increase of 571 per cent over a five-year pre-war average.

Before the war Canada was importing butter at the rate of 7,000,000 pounds annually. This country is now producing enough butter to meet domestic requirements, and, in addition, is exporting at the net rate of more than 4,000,000 pounds per annum.

It is estimated that Canada exported at least 25 to 30 per cent more wheat during the last 12 months than could have been exported had it not been for conservation and organization of the country's food resources.

By standardization of flour and lengthening the extraction in milling, a saving of 20,000 barrels of flour per month is being effected.

Conservation measures and voluntary saving in the homes have reduced Canadian consumption of flour from 800,000 to 600,000 barrels per month. This means a saving at the rate of 2,400,000 barrels per year, or, counting the saving by lengthened extraction of milling, of 2,640,000 barrels per year. This is equal to a saving of nearly 12,000,000 bushels of wheat.

Conservation efforts in Canada are releasing meat enough to provide the ration for, it is estimated, at least 500,000 soldiers.

Restrictions on the use of sugar in Canada will mean a saving of 100,000 tons per year. The average saving in public eating places is in excess of 40 per cent. A saving of 500,000 pounds per month has been effected by restrictions on the manufacture of bakery products. The use of sugar in ice cream has been cut in half. Fifteen thousand tons of sugar per annum are being saved by curtailment of its use in candy manufacture. The saving in confectionery is very large, one factory alone saving 450,000 pounds in four months.

A saving of 800,000 pounds of sugar will be made by the new restrictions on canners. Half a million pounds of sugar will be saved during the next four months by restrictions on manufacturers of chocolate products. Anti-hoarding measures have been effective and large stocks of sugar have been returned to trade channels.

Nearly 800 cars of foodstuffs have been saved from total or partial loss through spoiling.

An amazing reduction in waste is shown by reports from municipal officials in all parts of the Dominion," the statement says. "Profiteering has been greatly diminished and excessive profit taking is being stopped. For example, flour sold at \$14.50 per barrel in the spring of 1915, whereas the farmer had received only \$6.93 for the wheat contained therein. In the spring of 1918 the price of flour had been kept down to \$11 per barrel, while the farmer had received \$8.32 for the wheat contained therein."

Regulates Flour Milling Profits.

The United States Food Administration's so-called temporary plan of flour milling profit control, which was made effective July 1, is now being superseded by a plan which is expected to be permanent throughout the 1918-1919 crop year, with possibly some modifications under special circumstances.

The temporary plan established flour prices at seaboard points, and local prices were worked out from these by deducting freight. The new plan established definite fair prices at every mill point in the United States.

Up to the evening of July 21 over 4,800 of these individual fair price schedules had been forwarded to mills, and it is expected that by the evening of July 24 the fair price schedules will have been calculated and forwarded to practically every mill in the country, at least east of the Rock Mountains.

These price schedules will give the price for flour and various kinds of mill feeds that are considered by the Food Administration as fair for sales, on cash or

draft payment prices, in carload lots bulk at the mill. However, it is expected that competition will very often result in lower prices than the so-called fair price schedule.

A list of these prices at several points of the country is given below. To find what may be considered a fair price, from the consumer's standpoint, it is necessary to add to these prices the cost of packages, which for flour at the present time averages approximately 65 cents per barrel where flour is shipped in 98-pound or larger sacks, with cost of other containers running as high as \$2.55 a barrel over the bulk price where flour is shipped in small packages, such as 2-pound cotton sacks. Feed sacks are today costing equivalent to \$5.50 to \$6 per ton of feed.

Also to find the delivered cost of flour in carload lots, it is necessary to add the freight from the milling point, which in carload lots from Minneapolis to New York at the present time is 69 cents per barrel, and, of course, there are similar or relative freight rates between other points of the country. When sales are made by mills in smaller than carload quantities, it is considered fair by the Food Administration that additional charges be made because of the additional cost of handling the smaller sales and shipments, namely, sales in less than carload lots, 50 cents per barrel on flour, and sales to individual consumers by mills \$1.20 per barrel.

A jobber is required to sell at not more than 50 to 75 cents over the delivered cost to him, and the retailer at not more than 80 cents to \$1.20 over the price which he pays for the flour.

One advantage of the new plan is that as each invoice of the mill must have printed on it the so-called fair prices, it is very easy for any representatives of the Food Administration or for any buyer to know whether a mill has overcharged.

Cost of freight and packages and cost of handling less than carload quantities to be added to these prices to find delivered cost to the purchaser from mill.

Milling point.	Flour.	Bran.	Mixed feed.	Middlings, Shorts and Red Dog.
Boston	\$10.65	\$29.66	\$31.91	\$32.66
New York	10.61	30.26	31.51	32.26
Philadelphia	10.56	29.86	31.11	31.86
Baltimore	10.56	29.66	30.91	31.66
Nashville, Tenn.	10.38	27.46	28.71	29.46
Atlanta, Ga.	10.73	31.06	32.31	33.06
Louisville, Ky.	10.30	26.86	28.11	28.86
Durham, N. C.	10.75	31.26	32.51	33.26
New Orleans	10.16	27.26	28.51	29.26
Galveston, Tex.	10.23	29.76	21.01	31.76
Buffalo, N. Y.	10.33	28.16	29.41	30.16
Cleveland, O.	10.33	27.76	29.01	29.76
Duluth, Minn.	10.05	23.36	24.61	25.36
Minneapolis, Minn. ..	10.01	23.36	24.61	25.36
Grand Forks, N. D. ..	9.77	20.82	22.07	22.82
Great Falls, Mont. ..	9.33	16.67	17.92	18.67
Aberdeen, S. D.	9.65	19.95	21.20	21.95
Wichita, Kan.	9.58	19.41	20.66	21.41
Ft. Worth, Tex.	10.12	28.66	29.91	30.66
El Paso, Tex.	10.36	31.16	32.41	33.16
Omaha, Neb.	9.89	22.26	23.51	24.26
Kansas City, Mo.	9.89	22.26	23.51	24.26

Poultry and Egg Rules for Sales.

With the object of keeping fresh poultry and eggs moving from the producer to the consumer in as direct a line as possible, the U. S. Food Administration emphasizes the rules which must be observed regarding resales within the same trade. In the cases of both fresh poultry and fresh eggs the following classes of

dealers are recognized: (1) original packers and shippers, (2) commission merchants and wholesalers, (3) jobbers and suppliers of hotels and institutions, (4) retailers.

With a few exceptions, sales between dealers in any one of the above classes are prohibited. For the present, sales between wholesalers in different cities will be permitted when necessary to supply the reasonable requirements of the buyer's business. However, there must be an actual shipment of the goods and the movement between cities must be in the direction of normal crop movement from producer to consumer. In addition to these sales between cities only two sales between dealers in Class 2 may be made without obtaining the consent of the local Federal Food Administrator and then only if such sales are necessary to supply the reasonable requirements of the buyer's business. Further sales in this class cannot be made without the written consent of the local administrator.

In the other classes only one sale between dealers in the same class can be made without the consent of the local Federal Food Administrator and such a sale must be for the purpose of supplying the reasonable requirements of the buyer's business. Further sales can be made only after written consent has been obtained.

No backward movements of poultry and eggs will be allowed. That is, no dealer in one class can sell to a dealer in a preceding class. For example, a jobber is not permitted to sell to a wholesaler, or a retailer to a wholesaler.

Any licensee who violates these rules may expect to have his license suspended or revoked at once.

Careful Candling of Eggs Reduces Waste.

Although the candling method of determining the quality of eggs in the shell is the best known for commercial grading, recent investigations conducted by the United States Department of Agriculture show that one group of eggs of inferior quality cannot be detected by this system and that it is inadequate in grading still another group. The investigations, reported in Department Bulletin 702, show that experienced candlers and those using extreme care do not make many mistakes in grading eggs. Eggs with green whites and those having a normal appearance but bad odors, are not recognizable by candling. White rots, more particularly mixed rots, eggs with yolks slightly stuck to the shell, blood rings and eggs with bloody whites are not always detected and are included in the group most frequently miscandled by inexperienced or careless workmen. Eggs with brown shells or light-colored yolks make detection between good and bad specimens more difficult.

In the studies with skilled candlers, who candled a number of cases of 30 dozen eggs each, the average proportion of bad eggs miscandled per case varied from 0.2 in spring firsts to 10.77 in very low grade cold-storage eggs. The percentage of bad eggs which could not be found by recandling ranged from none to 6.93 per cent per case and depended on the grade of eggs examined. In the commercial candling of 128,587 eggs, 5,985 bad eggs were found, of which 71.65 per cent were recognized by candling, and the balance, or 28.35 per cent, were not found until the eggs were opened and examined individually. Then it was observed that the 28.35 per cent was divided between a group of 17.02 per cent bad eggs, which in many instances are distinguishable by candling, and a second group of 11.33 per cent, consisting of types of bad

eggs which cannot be discovered until the eggs are broken.

The accuracy of candling depends upon the quality of the eggs and the skill of the candler, according to the bulletin. In plants having poor management and poor candlers the number of good eggs in the discards sometimes reached 11 dozen to the case. The enforcement of a system of checking the work of individual candlers, particularly in plants employing inexperienced help, was found to be the best way to maintain high efficiency and thus eliminate waste by grading marketable eggs as rejects.

Sugar Equalization Board to Purchase All Sugar.

As a consequence of the higher price for the domestic beet and cane sugars which will be soon coming into the market, and in order to minimize the inequalities that would result from having this new domestic crop at the new price and the old foreign crop at the old price in the market at the same time, the Food Administration has announced that the U. S. Sugar Equalization Board will purchase all sugars in the country or in transit at the old price and immediately resell them back to the holders at the new price. The exact date at which the new price was to become effective had not been determined at that time, nor had it been settled what the new price was to be.

By this device the extra profit which would otherwise accrue to the refiners who purchased at the old price and would sell on the basis of the new, will be absorbed by the Sugar Equalization Board, which is the Government agency charged with the equalization of sugar prices, and which is handling the machinery of sugar distribution in the country.

The Food Administration is notifying all distributors or manufacturers using sugar and all refiners, of the impending change and warning the distributors and manufacturers that all their contracts should be made subject to any change in price that is authorized. It is reminding the distributors also of the rule that requires them to sell on the basis of invoice cost without regard to market or replacement value.

The price difficulty which this action is designed to meet comes about through the fact that the sugar from Cuba sent to the United States refineries and the sugar from the domestic beet and cane fields overlap in the market. The Food Administration some time ago agreed with the domestic producers that an increase of price was justified on the new crop.

The notice being sent to the cane refiners of the country announcing this action is as follows:

"In the near future the domestic beet and cane sugar crops will be coming on the market. The increased cost of producing these crops requires an increase in the price which can be charged for refined sugar. The Food Administration feels that it will be more satisfactory if a uniform price for sugar prevails throughout the United States after allowing for freight differentials, than a two-price system such as developed last fall. In any event, it is not proper to allow refiners to sell refined sugar manufactured from raws, purchased at the price of the 1917-1918 Cuban crop, at the higher price to be arranged for new crop domestic sugars.

"One of the purposes for which the United States Sugar Equalization Board has been incorporated is for equalizing the price of refined sugar in cases of this kind. The Food Administration requests you to transfer to the Equalization Board all of the sugar owned by you on the date when the price is raised, and all

sugar which is still due you under the contract of December 24 between the International Sugar Committee, the agents of various Cuban producers, and others, at cost plus a certain allowance hereafter referred to. The Sugar Equalization Board will immediately re-sell to you the same sugar at a price to be based on the increased price for domestic refined sugar. The entire stock of the Sugar Equalization Board is held by the United States, and any profit made on this transaction will be used by the Board in paying its expenses and for equalizing sugar conditions throughout the United States.

"The old crop domestic sugars will be purchased from the producers on the present basis and will be re-sold to the same parties on the basis of the advanced price.

"The proposed change in price will apply to all sugars held by refiners, beet or cane sugar producers wherever located, and also to all shipments then in transit and undelivered by railroad or other carriers to purchasers of sugar, excepting only that the proposed change in price will not apply on any shipments or deliveries made before 7 a. m. on the date of its taking effect, to the United States Government or its Allies, or for export or overseas shipment."

The Food Administration also announced that at the same time the new sugar price becomes effective refiners will be allowed an increased margin for cost and profit over the present margin of \$1.30 a hundred pounds. The new margin will be \$1.45 per hundred and will be retractive, dating from August 1. The increase is granted on the evidence that from August 1, 1918, to January 1, 1919, the refiners will operate at a greatly reduced capacity, bringing about an increased cost per unit, due to a shorter supply of raw sugar, and increased cost of labor, material and containers.

Upon the presentation of the refiners' request for an increased margin last May the Food Administration after considering the matter, turned it over to the Hon. Oscar S. Straus as a referee to determine whether an increase was justified. Mr. Straus called upon the Tariff Commission for expert advice, and after two months' investigation by the Tariff Commission and study by Mr. Straus, he reported that from January 1 to July 1, 1918, the \$1.30 margin gave a fair and adequate profit, and that if the conditions should remain the same for the remainder of the year no additional margin would be justified, but that the possibilities of lack of raw sugar, increase of wages and in cost of materials, fuel and containers, would have a bearing on the proper decision, and since he could not decide upon the probability of these contingencies, he referred the settlement of this matter to the Food Administration. Thereupon the Food Administration appointed a special committee to take the matter up.

Inspection Service for Fruits and Vegetables Extended.

The inspection service for shipments of fruits and vegetables started by the Bureau of Markets last year has been extended to cover 36 terminal markets and Army training camps. The certificates issued by inspectors state the condition of shipments of fruits and vegetables as they arrive at market centers and are used as a basis for settling any claims that may arise between shipper and consignee.

LEFFLER SPECIAL MACHINERY

Paper Can Machinery

Metal Package Machinery

Automatic Tin Can Machinery Soldering Machinery

Sanitary Can Machinery

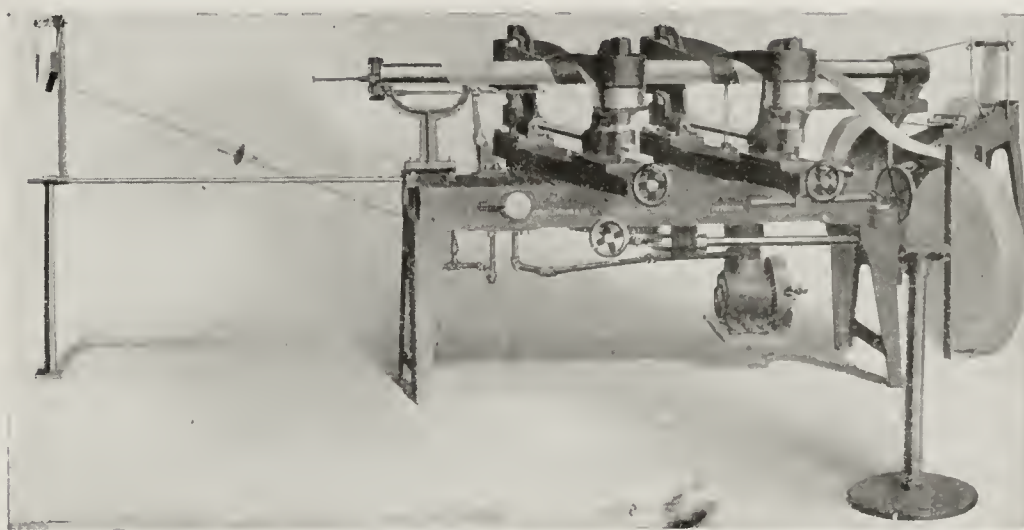
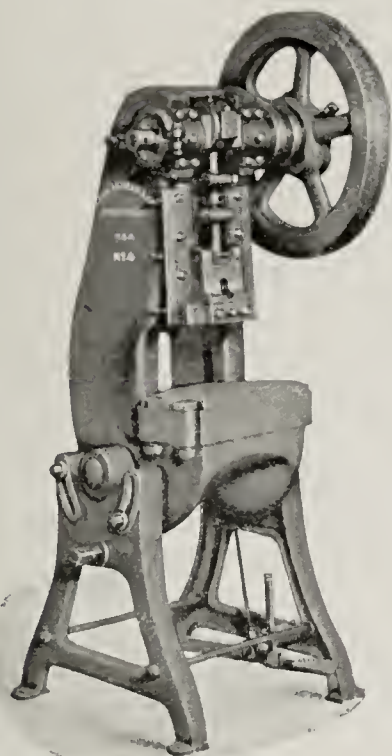
CATALOGUES ON REQUEST

Chas. Leffler & Co.

Clymer Street

Kent Avenue

BROOKLYN, N. Y.



Retail Candy Sales to Be Limited.

Candy makers have been cut down by the Food Administration to one-half the sugar they used last year, but no restriction has been placed upon the amount of candy that retailers may sell at one time.

The seeming inconsistency of this situation with the regulation that limits purchases of household sugar to two pounds at a time was appreciated by the confectioners themselves. The Association of Manufacturers of Confectionery and Chocolate of the State of New York sent a committee on candy conservation to Washington to confer with the Food Administration, August 12. At this meeting resolutions were passed urging retailers to limit candy sales to one pound and to suggest that the public cut its aggregate purchases to one-half its usual consumption. This suggestion does not apply to dealers other than retailers.

The committee was made up of H. W. Hoops, F. A. Chappell, William F. Heide and M. L. Morgenthau. The recommendations follow in full:

"1. That the retailers of candies and chocolate reduce the amount of show-window space now used for display of candies and chocolates by one-half, and use the other half for war purposes, such as Food and Fuel Conservation, War Saving Stamps, Liberty Loan, Red Cross, Y. M. C. A., Knights of Columbus, and any other worthy war activity.

"2. That the general display of candies and chocolates in show-windows be reduced to a minimum, and that no filled or dummy boxes larger than the one-pound size be displayed. This does not refer to the display of military boxes.

"3. That all manufacturers and retailers of and dealers in candies and chocolates make an inventory, as of September 7, 1918, of all candy boxes, two pounds or more in size or capacity, whether filled or not, on hand or under contract—but this recommendation does not apply to the so-called manufacturers' standard five-pound stock boxes or packages of count goods. This inventory shall be kept on file by said manufacturers, retailers and dealers until called for by the United States Food Administration.

"4. That all boxes containing more than one pound now packed and wherever held may be disposed of, but all further packing of such boxes should cease while conservation is necessary.

"5. That, as the United States Army needs all the chocolate shells it can secure, as cocoanut candies require but a limited amount of sugar and as patriotism can be expressed in the kinds of candies consumed, insofar as possible, the manufacture, display and sale of candies containing cocoanut be encouraged.

"6. That publicity should be given to the fact that during the summer months, the period of our greatest sugar scarcity, the purchase and consumption of candies and chocolates can be greatly reduced and the desire for sweets can still be gratified by the more liberal use of fresh fruits.

"It is not the aim of the Food Administration to discourage the purchasing of candy altogether, but to moderate its consumption with a view to the saving of sugar which must be saved in order to prevent shortage."

Penalties Under Food Control Act

For violations of the U. S. Food Administration's regulations a number of licensees were penalized during the past few weeks. Among them were the following:

George T. Renke Corporation, of 66 Broadway, New York City, had its license revoked because of dishonest business methods and the refusal to accept 22,000 cases of Alaska salmon according to contract. Besides its commission business the corporation dealt in rye, barley, wheat, cottonseed cake, copra, peanuts and malt.

Peter Landbern, a baker of Moline, Ill., was permitted to contribute \$2,000 to the Red Cross for having made inaccurate reports to the Food Administration concerning his use of substitutes in making bread. His license was not revoked because of the bread situation in Moline.

L. and R. Mayer, hotel proprietors of Baton Rouge, La., were allowed to contribute \$1,000 to the Red Cross for having hoarded sugar and making false reports of sugar on hand.

John H. Brooks, a wholesaler and commission merchant of Jacksonville, Texas, had his license revoked for one month, effective August 12th, for wasteful practices and methods in shipping tomatoes.

Joseph Woods, a restaurant keeper at 513 Main Street, Little Falls, N. Y., has been forced to go out of business because of having violated the food rules and refusing to pay the penalty of contributing \$25 to the Red Cross, rather than have his business closed for a week. This penalty was his request and after having paid \$5 he declined to make further payment. He was prevented from buying further supplies nor will he be able to do so until he makes amends.

N. F. Zimmerman, a grocer of Ketchikan, Alaska, had his place of business closed for three days and a sign displayed stating the reason for it, for having sold ten sacks of wheat flour and three sacks of sugar

to a fish packing company in his section without first applying for and obtaining the necessary permits required for the sale of these commodities in excess of the regulations. This is the first case of violation of food rules which has come to the attention of the Food Administration from Alaska.

The Hellums Company of Grady, Ark., ginners and retailers of cottonseed, had its license suspended for having failed to contribute \$500 to the Red Cross which they had been permitted to do in lieu of revocation of their license, for having made excessive profits.

William Culber of 56 Commerce Street, Newark, N. J., had his business suspended for two weeks from September 2 for having refused to accept a car of onions for which he had contracted.

The Mendota Market, 19th Street and Columbia Road, N. W., Washington, D. C., was obliged to suspend its business in licensed commodities for having charged exorbitant prices for potatoes, eggs, corn and tomatoes, and also for having adopted a hostile and stubborn attitude toward the Food Administration.

F. N. Willett, of Houlton, Me., had his license revoked for unfair practices in business.

Michael Wax and Alexander Lerman, wholesale jobbers of wheat and rye flour in Philadelphia, had their license revoked for having done business on a purely speculative basis and refusing to accept shipments when the market declined.

Morris Ball, a restaurant keeper in Philadelphia, was restrained from buying licensed commodities because he had served eight slices of bread to a customer and refused to recognize the authority of the Food Administration.

The Economy Grocery Stores Company, Inc., which has headquarters at 17 John Street, Boston, Mass., had its license revoked to deal in sugar for having made false statements in attempting to secure excess quantities of sugar. This concern is a wholesaler which supplies hotels and restaurants.

Sable Fish a New Market Variety.

Secretary of Commerce Redfield has issued a special bulletin on the marketability of the sable fish, which is often known as black cod. This is the third kind of fish which Mr. Redfield has introduced to the American market, the first being the tile fish and the second and grayfish. The bulletin stated:

"The Bureau of Fisheries now presents the sable fish, which, for no reason of its own making, has lived heretofore under the alias 'black cod.' It is not a cod, and is not related to the members of that family by lineage, structure or edible qualities. When it was discovered on the Alaska coast in 1811 the only name which it bore was the barbarous one used by the Indians, and the early white settlers and explorers, with the unconventionality common in new communities, gave it a nickname based on superficial appearances. So long as the fish was practically unutilized the misnomer was of little moment, but now that it is entering into commerce it becomes deceptive and not only runs the risk of being banned under the pure food laws, but is actually misleading to the consumer, who may buy it under the impression that it resembles the cod.

"The cod is dry-meated, while the sable-fish is one of the richest and fattest of American fishes and is to be cooked differently. Its flesh is firm, white and flaky, with a full, rich flavor, while the fats are almost gelatinous in their consist-

tency. A high authority on dietetics in the department of home economics of the University of Washington says that it 'is excellent from an economic standpoint, as there is little waste, being almost free from bone and requiring very little time for cooking. It is suitable for the humblest home on account of its price and for the millionaire's table from its fineness of texture and delicious flavor.'

"Until now its excellence has been known to but a few persons on the Pacific Coast, but the time has come when, on account of its edible qualities and low price, it should be made known to all. It is found in the deep water off the coast from San Francisco to Alaska, and is particularly abundant from Oregon northward. It has been caught more or less freely by the halibut fishermen for many years, but has been regarded as a nuisance rather than at its true worth, because, with the characteristic American heedlessness of the value of natural resources, it has been neglected by the consumer and there has been no market for it. Millions of pounds have been returned to the sea annually, while the people who should have been using it have been clamoring for investigations into the reasons for the high cost of living. Here is one reason which requires no legislation for its correction.

"The sable fish, as caught, averages about 15 pounds in weight, although it grows much larger. On account of its firm texture it 'ships' well, and is therefore available fresh far from its home in the Pacific."

OVAL LABEL PACKAGE

Your Policy of Pure Food Insurance

THERE is a sense of security is there not in that life insurance policy you keep in your strong-box? Well, every discriminating buyer of pure food products experiences that same sense of security when the package bears the famous OVAL LABEL, the distinguishing mark of supreme food excellence, of supreme food protection.

Armour's

Is America's greatest thrift line, and the Oval Label is your guarantee that tip-top quality has been secured through scientific selection and processing. There is no waste, no loss of time



in preparation and the widest variety to choose from, for the line includes Meats, Fish, Soups, Fruits, Vegetables, Pork and Beans, Condiments, Seasonings, Extracts, Peanut Butter, Evaporated Milk, Rice, Coffee, etc.

ARMOUR AND COMPANY
Chicago

2565

Corn Milling Grades Changed.

Changes in corn milling grades, affecting grits, cream meal, corn flour, pearl meal and common corn meals, were recently announced by the Food Administration. These are expected to standardize corn milling products further in order that the housewife may be sure, when purchasing, that she will always get the same grade under the same designation. This action follows upon a conference with the Western Corn Millers' Committee. The committee protested that the earlier grades established, while satisfactory for some mills, were too rigid for others.

The new grades will permit grits, cream meal and corn flour to have a moisture content of from 12½ to 13½ per cent. Fat content may range from 1½ to 2½ per cent, instead of being limited rigidly to 1½ per cent. In any case, the sum total of the two must not exceed 15 per cent.

Standard, bolted and plain or water-ground common corn meal, when shipped in interstate traffic, must not contain more than 12 per cent of moisture. It is to be unrestricted as to moisture or fat content if for local distribution. Pearl meal standards for moisture and fat, respectively, are now 12 and 3 per cent, whether domestic or export. The figures were formerly 11 per cent for moisture and 3 per cent for fat.

In the past, meals not standardized have spoiled in transit, which caused some dissatisfaction among housewives who used corn products as substitutes for wheat. The Food Administration has standardized in the same manner rye and barley flour and oat and corn products.

Canadian Regulations to Conserve Wheat.

The Canadian Food Board, according to Consul Felix S. S. Johnson, Kingston, Ontario, recently has issued an order to the effect that no licensed dealer may legally have in his possession for sale any wheat or standard flour unless he has also at all times a sufficient stock of substitutes to meet the demands of his customers at reasonable prices.

Persons at points east of but not including Port Arthur must purchase substitutes in the proportion of not less than 1 pound to 2 pounds of wheat or standard flour, while persons west of and including Port Arthur must buy not less than 1 pound of substitutes to 4 pounds of wheat or standard flour. Dealers are forbidden on and after the date of this order to sell flour unless substitutes in the proportion stated, or to a greater proportion, are purchased.

It also requires that every baker must place on each loaf of bread a label or sticker bearing his name and address, and the words "Victory bread." The latter expression will be a guaranty that the prescribed amount of substitutes for standard wheat flour required by the Canadian Food Board have been used in making the loaf. Bread which does not bear such label or sticker may be seized and forfeited. The list of wheat-flour substitutes includes bran, shorts, corn flour, corn meal, edible cornstarch, hominy, corn grits, barley flour, oat flour, rolled oats, oatmeal, rice, rice flour, buckwheat flour, potato flour, tapioca flour, rye flour and rye meal. Potatoes may also be used, but on account of their high moisture content, 4 pounds of

EQUAL to the PRODUCTS of an immaculate HOME KITCHEN

Food products have never been so closely analyzed by consumers as is being done at the present time, while conservation has stimulated home production of various kinds of preserved fruits and vegetables, teaching lessons of real value and educating consumers to a more discriminating sense of quality.

This is most commendable, but we can assure all consumers of

RICHELIEU FERNDELL and BATAVIA Brands of PURE FOOD PRODUCTS

that there is nothing produced in the very best regulated home kitchen that can show any superiority over these goods.

They are prepared from fresh fruits and vegetables by the most skillful and sanitary methods. And, most important to the consumer, constant diligence is exercised to keep their wholesome goodness dependably uniform.

**Sprague, Warner & Company
CHICAGO**

potatoes must be taken as the equivalent of 1 pound of the substitutes required.

The order makes it an offense for any person to sell or have in his possession any bread, rolls, pastry or any other products in which white or standard flour is used which does not conform to the requirements of the Food Board. The penalty for violations of the new regulations is a fine of not less than \$100 and up to \$1,000 or imprisonment for a period not exceeding three months, or both fine and imprisonment.

Proposed Change in Price of Sugar Goes Into Effect.

On September 6, the Sugar Equalization Board, upon the approval of the President, fixed the price of granulated cane sugar for next year's basis at 9 cents, less 2 per cent f. o. b. seaboard points. This became effective on September 9.

As notified by the U. S. Administration, wholesalers and retailers must sell upon the old basis until their stocks of sugar obtained at the old prices are exhausted. No averaging of price will be allowed. All increase in the prices of sugar in the hands of refiners or of raw sugar under contract is to be accounted for to the Sugar Equalization Board, so that manufacturers will not benefit by the increased price.

The Sugar Equalization Board has thus protected the consuming public against any profiteering in the advance which has been caused by the increased cost of production of domestic sugars.

Maximum Prices of Beef for Army and Navy.

After a two-day conference between packers and the Food Administration, attended by officers of the Army, Navy and Marine Corps, maximum prices were given at which beef will be allotted for September delivery—excepting on the Pacific Coast—for the Army, Navy and Allies.

The following bases are f. o. b. Chicago, per 100 pounds, for steers of quality and grade satisfactory to the authorized inspectors, chilled and unwrapped.

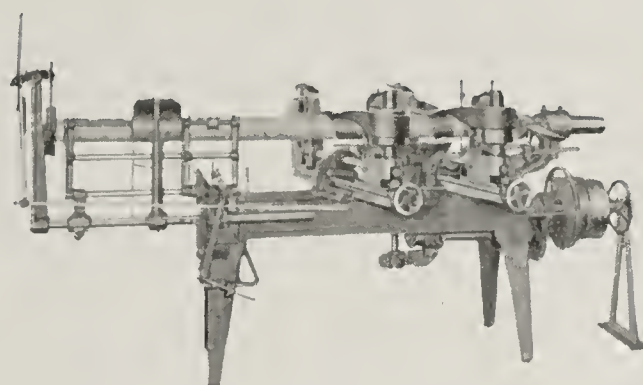
475 to 575 pounds.....	\$21.90
575 to 700 pounds.....	22.65
700 to 850 pounds.....	23.55

The general meat situation was discussed, conservation programs were canvassed, and relief measures were suggested to take care of beef coming into the market as a result of drouth in Southern and Southwestern states.

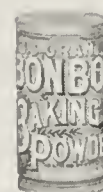
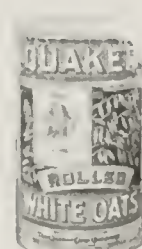
The average weight of cattle marketed this year, it was brought out, is 30 pounds lighter than last, 40 pounds lighter than in 1916, and 60 pounds below the 1915 average. This is due in part to excessive marketing of immature cattle owing to drouth conditions.

Raisers of livestock are now receiving exceptional profits, probably higher than at any time since the Civil War. During a part of last winter and early spring feeders of cattle were less fortunate and suffered a loss upon their feeding ventures. However, cattle feeders who held their stock until late spring made a profit, but it has remained for the stock raisers who are now marketing cattle of a size and quality to be acceptable for government use to reap unusual profit.

To utilize cattle below 475 pounds in weight, the minimum now being supplied on Army specifications, housewives and proprietors of public eating places are asked by the Food Administration to buy cuts from lighter weight stock and to urge that meat markets of the country secure a supply of beef from these lighter cattle.



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but

our experience can only be
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SAMUEL M. LANGSTON CO., Camden, N. J., U. S. A.

AGENTS

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George Fethers & Co. - Melbourne Australia

T. W. & C. B. Sheridan Co.
London, England

Stocks of Fats and Oils in the United States, July 1, 1918.

Stocks of fats and oils in commercial channels, other than retail stocks, as reported to the United States Department of Agriculture in the comprehensive food survey for July 1, 1918, were as follows: Lard, 114,693,782 pounds; lard compounds (including substitutes other than purely vegetable substitutes), 50,410,780 pounds; solid vegetable cooking fats, 42,636,551 pounds; oleo stock, oleo oil and edible tallow, 30,770,747 pounds; cottonseed oil, 41,718,674 gallons; olive oil, 901,995 gallons; peanut oil, 4,839,931 gallons; corn oil, 2,891,457 gallons.

The figures given above include stocks actually reported as on hand by manufacturers, storage houses and wholesale dealers, and also quantities reported as in transit from these stores. The stocks of retail dealers, as reported for July 1, 1918, were not included, since these reports were still in process of being tabulated. In a similar survey made by the department for January 1, 1918, the retail stocks constituted the following percentages of the total commercial stocks of the commodities here considered: Lard, 29.5 per cent; lard compounds, 38.3 per cent; solid vegetable cooking fats, 28.9 per cent; oleo stock, oleo oil and edible tallow, 2.2 per cent; cottonseed oil, 2.5 per cent; olive oil, 44.8 per cent; peanut oil, 4.8 per cent.

In the case of lard and lard compounds, the stocks reported as on hand on July 1, 1918, were slightly less than the corresponding stocks for July, 1, 1917, the percentages being 96.3 and 98.4, respectively. The holdings of oleo stock, oleo oil and edible tallow were

87.8 per cent of those reported a year earlier. The greatest decrease is noted in the case of olive oil, where the holdings on July 1, 1918, were only 35.8 per cent of the holdings for July 1, 1917. In the case of the four remaining commodities, the stocks reported represent an increase over the corresponding stocks of a year earlier, the percentage of increase being as follows: Solid vegetable cooking fats, 14.5 per cent; cottonseed oil, 8.2 per cent; peanut oil, 194.8 per cent; corn oil, 56.6 per cent.

Salt Water Fish Production to Be Increased.

In order to greatly increase the production of salt water fish and to make up for the loss in vessels and small producing units which American fisheries have suffered through the war and particularly by naval drafts, the Emergency Fleet Corporation at the request of the U. S. Food Administration will begin immediately the construction of a fleet of 75 deep sea trawlers of the most modern type. These vessels through arrangement with the fishing industry will be put into operation early in 1919 on both the Atlantic and Pacific coasts and in the Gulf of Mexico.

Heavy increases in the annual production of haddock, small cod, flat fish and other salt water varieties will result, enabling carloads to enter all the interior markets of the country every week in the year. Stable prices will be maintained at low levels. The addition of the large catches of this fleet to the total fish supply of the nation will effect a general lowering of prices on practically all varieties of both salt water and fresh water fish.

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of the Finest

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**Canned Foods,
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Plum Pudding,
Sauces, Table Delicacies,**

and

PRIDE OF THE FARM Tomato Catsup

**Bridgeton, N. J.
and 331 Spring St., New York**

Whiter—Sweeter—Lighter Bread and Cake

The first essential of success in home baking is to employ a leavener that is pure, thorough and dependable—one that raises evenly, and gives the bread and cake the right texture, and appetizing appearance—and makes them easily digested. The purity, uniform strength and perfect keeping qualities of

Rumford

THE WHOLESOME
BAKING POWDER

insures whiter, sweeter and lighter cake and bread—it raises the baking just right, and adds to the nutritive value, as it restores phosphatic elements equivalent to those which fine wheat flour loses in the process of milling.

Every Housewife, Dietitian, Domestic Science Teacher and Lecturer should have a copy of "Rumford Dainties and Household Helps." We will be pleased to send it free upon request.

RUMFORD CHEMICAL WORKS,
Providence, R. I.

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RECENT PATENTS

The following patents of interest to readers of this JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

- 1,270,316. Candy-coating machine. Henry G. Osterberg, Brighton, Mass., and August F. Osterberg, Auburn, N. Y.
- 1,270,540. Apparatus for drying foodstuffs. Elizabeth G. Morse, Reading, Mass.
- 1,270,797. Canning. Melville E. Dunkley, Kalamazoo, Mich.
- 1,270,798. Canning. Melville E. Dunkley, Kalamazoo, Mich.
- 1,279,875. Food product and method of making same. Hugh Rodman, Edgewood, Pa., assignor to Rodman Chemical Co.
- 1,270,900. Apparatus for drying macaroni, spaghetti and similar foods. Salvatore Viviano, St. Louis, Mo.
- 1,271,065. Baker's furnace. Eloy Nelson, Oak Creek, Colo.
- 1,271,139. Composition of matter to be used as a flour. Richard W. Dickenson, Jr., Sioux Falls, S. D.
- 1,271,309. Food-baking device. Conrad C. Gross, Pasadena, Cal.
- 1,271,371. Preparation of yeast. Lee Roush, Beaver, Pa.
- 1,271,501. Treating hams to prevent souring. Louis N. Boelio, Chicago, Ill.
- 1,271,700. Apparatus for use in connection with molding, shaping, or otherwise working dough. Edgar Greenwood, Bradford, and Alfred Sharp, Manchester, England.
- 1,271,761. Coffee product and process of making the same. William G. Phillips, Jr., and William F. McKenna, Brooklyn, N. Y.
- 1,271,765. Prepared health food and process of making same. James P. Pursell, Quincy, Ill., assignor to The Fruited Cereal Co., same place.
- 1,271,844. Trimming and delivering mechanism for pastry-making machines. Frederick A. Bruckman, Portland, Ore.
- 1,271,847. Method of canning fruit. William C. Buhles, San Francisco, Cal., assignor to Bremer & Bruckmann, Braunschweig, Germany.
- 1,271,868. Pineapple-fleshing machine. John Dunn, Honolulu, Hawaii.
- 1,271,960. Process for preparing gelatin. Tametaro Tada, Tokushima Ken, Japan.
- 1,271,962. Process of curing meat. Charles B. Trescott, Chicago, Ill.
- 1,271,991. Process of stabilizing temperance cereal beverages. Charles S. Ash, San Francisco, Cal., assignor to Gould & Ash, same place.
- 1,272,035. Milk-food product and method of making the same. William P. M. Grelek, Lincoln, Neb.
- 1,272,220. Process of making leavened bread from wheat-flour and corn-meal. Joseph M. Clarke, Shreveport, La.
- 1,272,266. Method of preparing carrot flakes. Mary C. Horn, Meunster, Tex.
- 1,272,276. Process of vinegar making. Erwin Klein, Peekskill, N. Y.
- 1,272,277. Apparatus for vinegar making. Erwin Klein, Peekskill, N. Y.
- 1,272,307. Fruit-sizer. George D. Parker, Riverside, Cal.
- 1,272,750. Process of preserving citrus fruit. Joseph D. Wilson, Upland, Cal.
- 1,272,803. Nut-cracker. Frank Hayes and Carl Rupp, Los Angeles, Cal., assignors to California Walnut Growers' Association, same place.
- 1,272,892. Confectionery machinery. Phillip J. Baur, Philadelphia, Pa.
- 1,273,054. Process of recovering caffeine. Luigi Fontanelli, Ferrara, Italy.
- 1,273,072. Prepared food and process for making the same. Xenophon Kuzmier, Hartsdale, N. Y.
- 1,273,144. Prepared food. Alfred S. Burdick and Carl Nielsen, Chicago, Ill., assignors to The Abbott Laboratories, same place.
- 1,273,145. Vegetable milk. Alfred S. Burdick and Carl Nielsen, Chicago, Ill., assignors to The Abbott Laboratories, same place.

ENJOY



BEE BRAND

PERFECT PRODUCTS



EXTRACTS---SPICES---BANQUET TEA

McCORMICK & CO., Inc.

BALTIMORE, MARYLAND

- 1,273,334. Cheese-mold. Dell S. Crosby, Chicago, Ill.
 1,273,335. Cheese-mold. Dell S. Crosby, Chicago, Ill.
 1,273,375. Method of testing milk. Hugo Jone, Brooklyn, N. Y.
 1,273,410. Substitute for fats for shortening. Sigmund Rozycki, Seattle, Wash.
 1,273,535. Smoke-generator for smoking meats. Isaac Powers, Terre Haute, Ind.
 1,273,732. Method of preserving beets. Frank H. Bryant, Los Angeles, Cal.
 1,273,974. Nut-cracking machine. Robert E. Woodson, St. Louis, Mo.
 1,274,218. Process of making and new food product of milk. Paul W. Yurney, Portland, Ore.
 1,274,334. Baking preparation. Robert E. Rose, Wilmington, Del.

Tea and Coffee Containers Standardized.

Tea and coffee will be sold only in non-metal containers as soon as present stocks of tin containers are used up. This recommendation was made by a representative committee of the trade recently, after a conference with Food Administration officials, during which the necessity for conservation of tin, lumber and labor as a war measure was laid before them.

Coffee will be sold at retail only in packages of one, three and five pounds each, and tea in one-fourth, one-half and one-pound containers, according to the recommendations. Square packages will be adopted, so far as possible, to save packing space, and cases for shipping cartons in quantity will be of fibre. This will save the lumber that formerly went into wooden cases, and the steel used in nails.

Big Increase in Cottage-Cheese Sales.

Reports from four western cities where cottage-cheese campaigns have recently been completed show largely increased sales of this wholesome meat substitute. The following increased daily sales are recorded: Salt Lake City, Utah, from 375 to 850 pounds; Spokane, Wash., from 100 to 1,800 pounds; Seattle, Wash., from 1,115 to 1,675 pounds; San Francisco, Cal., from 393.5 to 1,624 pounds; or a total increase of 3,969 pounds of cottage cheese sold daily in the four cities.

This is the result of 10-day campaigns in each city in which the food value of cottage cheese and its use in new dishes was demonstrated by a woman agent in dairying and in which the creameries and milk plants were assisted in making cheese by two representatives from the United States Department of Agriculture and the State agricultural college.

Premium Coupons in Official Disfavor.

The Federal Trade Commission has ordered the C. D. Kenny tea and coffee company, of Baltimore, to discontinue the circulation with its products of premium coupons redeemable for articles of unequal value, involving the element of chance. The practice was regarded by the Commission as an "unfair method of competition."

The Commission also announced the dismissal of complaints against four other coffee concerns under like charge, as follows: Enterprise Coffee Company, J. S. Elliott Coffee Company, R. L. Gerhart and Climax Coffee and Baking Powder Company.

THERE IS

CLEANLINESS, HEALTH
INSURANCE, ECONOMY
AND CONVENIENCE IN



Our **PET**
BRAND
**Evaporated
Milk**

The Standard of the World

Wins and Holds Trade on
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PREPARED BY

Helvetia Milk Condensing Co.

HIGHLAND, ILLINOIS

ORIGINATORS OF EVAPORATED MILK



It covers "red meat"

Millions of squares of K. V. P. waxed and vegetable parchment papers are being used to protect much of the "red meat" that finds its way into the mess kitchens of army camps and cantonments.

These papers are used to protect practically all kinds of food.

Made from the raw material in the "world's cleanest paper mill."

Kalamazoo Vegetable Parchment Company
KALAMAZOO, MICH.

*Makers of Vegetable Parchment, Waxed
and Bond Papers and Paper Specialties*

The Cheese Industry Regulated.

One effect of the rules regulating the cheese industry recently issued by the Food Administration is expected to place some foreign types of cheese on a basis that will enable them to hold their own against renewed competition from abroad after the war, thus fostering a comparatively new industry.

The cutting off of foreign competition by the war has led to a great increase in the American manufacture of these cheeses and also, through the intense competition of jobbers for the limited domestic supply to practices that have interfered seriously with quality. This has been notably true of the round Swiss cheese, manufactured in parts of Wisconsin, New York and Ohio.

In the scramble for the limited stock, dealers, in order to make sure of getting the product, of the factories, have been buying it earlier and earlier, putting it into cold storage before it had time to mature sufficiently to make proper grading of quality possible. The manufacturers were unable to resist the inducements which the eager jobbers offered, but some of them recognized the danger to the industry when it was pointed out to them by members of the Food Administration at a conference in Washington, and asked the Food Administration to save them from themselves.

When the cheese regulations were drafted provisions were made, therefore, which discourage the buying of ungraded cheese. Hereafter a dealer who buys ungraded cheese can sell no part of the lot at a higher price than the price paid per pound for the entire lot, plus certain specified margins. This makes the buying of cheese before it has matured sufficiently to indicate its quality, too risky to be considered, and the result should be a better quality due to proper handling and maturing at the factory, which is equipped for the work.

The Powdered Milk Industry.

One of the greatest conservation factors in the dairy industry is found in the manufacture of powdered milk by processes which began to come into wide use about 15 years ago. The last available census figures for 1914 give the total production of powdered milk as 20,000,000 pounds a year in the United States, of which New York State made almost half, with Wisconsin second and Michigan third. Nine pounds of milk powder represent 100 pounds of milk, and all forms of milk, such as whole milk, skim milk, buttermilk, and cream, are now dried successfully, as well as modified milk for infants' food. Dried milk products are in such demand that this country has never had a surplus for export. They are used in baking, ice cream, candy, and other products, as well as by families, and offer a method by which a great surplus in a perishable food staple may be turned into imperishable form and held for market.

Live Stock Receipts in July.

Increased receipts of cattle, hogs, and sheep at 34 cities during July, 1918, compared with receipts at the same cities in July, 1917, are shown by the stockyards report of the Bureau of Markets, United States Department of Agriculture. July receipts for the two years at the 34 cities which include most of the large markets, with 1918 figures first, were: Cattle, 1,897,847—1,552,573; hogs, 2,813,749—2,395,226; and sheep, 1,409,868—1,174,335.

Notices of Judgment Under the Food and Drugs Act

(Continued from the preceding issue.)

5526. Misbranding of "Cerebro-Spinal Nerve Compound."

Misbranding was alleged because of the false and fraudulent claims that the article was a remedy for all nervous diseases and heart troubles. On December 1, 1915, the defendant was found guilty and was fined \$200 and costs. On May 8, 1917, this judgment was affirmed by the Circuit Court of Appeals.

5527. Adulteration of tomato pulp.

Adulteration was alleged because of filth and decomposition. On February 9, 1917, the defendants were found guilty and were assessed all costs. The product was destroyed.

5528. Adulteration of oysters.

Adulteration was alleged because of filth and decomposition. Early in March, 1916, the product was destroyed and judgment was entered to recover costs from claimant.

5529. Adulteration of oysters.

Substantially the same as No. 5528.

5530. Misbranding of "Constitution Water."

An article labeled as above was held to be misbranded because of the false claims that it was a cure for diabetes, gravel, bleeding piles, diseases of the kidneys and bladder, and female complaints. On May 14, 1917, the defendant pled guilty and was fined \$2.

5531. Misbranding of cottonseed feed.

Cottonseed feed which was labeled to contain 36 per cent protein but shown by analysis to contain 31.64 per cent, was held to be misbranded. On May 26, 1917, the defendants pled guilty and were fined \$100 and costs.

5532. Misbranding of high protein tankage meat residue feed and Sulzberger's meat scraps.

Misbranding of high protein tankage meat residue feed was alleged because the guaranty of "protein 60 per cent" was not substantiated by analysis, which showed 49.8 per cent protein, and misbranding of meat scraps was alleged because the guaranty of "protein 50 per cent and crude fiber (maximum) 1 per cent," was not substantiated by analysis, which showed protein 42 per cent and crude fiber 2.16 per cent. On March 17, 1917, the defendants pled guilty and on April 9, 1917, were fined \$200.

5533. Adulteration of tomato pulp.

Adulteration was alleged because of decomposition. On April 25, 1917, no claimant having appeared, the product was destroyed.

5534. Adulteration of tomato pulp.

Substantially the same as No. 5533.

5535. Misbranding of "Pulmonol."

An article shown to be a solution in glycerol and water of sodium benzoate, potassium, guaiacol sulphate (thiocol), and a little strychnine, colored with amaranth, a coal-tar dye, was held to be misbranded because of the false claim that it was a cure for consumption. On March 26, 1917, the defendants were found guilty and were fined \$25.

5536. Misbranding of "Tweed's Liniment."

An article labeled as above was held to be misbranded because of the false claim that it was a sure cure for rheumatism, neuralgia, * * * diphtheria. On April 24, 1917, the defendant pled nolo contendere and was fined \$10.

5537. Misbranding of "Ka-Ton-Ka."

An article labeled as above shown to consist of alcohol, sugar, aloes and sodium bicarbonate, was held to be misbranded because of false claim that it was effective for kidney and liver complaints, erysipelas, female troubles, fever and ague, rheumatism, dyspepsia, catarrh, scrofula, blood poison, syphilis and malaria. On March 21, 1917, the defendants pled nolo contendere and were fined \$200 and costs.

5538. Misbranding of "Compound Prickly Ash Bitters."

Misbranding was held because of the false claim that it was a remedy for gallstones, indigestion, dyspepsia, diabetes and hepatitis, and as a preventive of kidney diseases. On May 7, 1917, the defendants pled guilty and were fined \$20 and costs.

5539. Adulteration and misbranding of vinegar.

An article labeled as apple vinegar, but containing distilled vinegar or dilute acetic acid was held to be both adulterated and misbranded. On March 15, 1917, no claimant having appeared, the product was destroyed.

5540. Adulteration of beans with tomato sauce.

Partial decomposition was held to constitute adultera-

tion. On March 16, 1917, claimants having consented, the product was released to them upon payment of the costs and under \$1,000 bond, conditioned that the cans be opened, cleaned, repicked, recanned and reprocessed under proper supervision and the decomposed beans be destroyed.

5541. Adulteration of pork and beans.

Substantially the same as No. 5540.

5542. Misbranding of vodka for Passover.

A vodka of domestic origin but so labeled as to indicate that it was imported from Russia, was held to be misbranded. On February 17, 1917, the defendants were found guilty and were fined \$199.

5543. Adulteration of candy.

Adulteration was held because the candy was musty and stale, and shown to consist of filthy and decomposed material. On May 17, 1917, the defendants were found guilty and were fined \$20 and costs.

5544. Adulteration of pork and beans with tomato sauce.

Substantially the same as No. 5540.

5545. Adulteration and misbranding of white groats.

An article labeled as fine white groats but shown to be a mixture of granulated buckwheat, corn and barley was held to be adulterated and misbranded. On May 24, 1917, the defendant pled guilty and was fined \$25.

5546. Misbranding of "Greenhalgh Diphtheria Remedy."

An article labeled as above was held to be misbranded because of the false claim that it was a remedy for diphtheria. On February 24, 1917, the defendants pled guilty and were fined \$100. Charges of misbranding in connection with "Locus Oil," "Blood Purifier," "Cancer Powder," "Canker Syrup," "Liniment," "Rupture Powder," and "Drawing Ointment" were dismissed on motion of the U. S. attorney.

5547. Adulteration and misbranding of pepper.

An article labeled as pure ground black pepper was held to be adulterated and misbranded because of the presence of added pepper shells. On March 20, 1917, the product was ordered sold by the United States marshal after having been properly labeled, and the defendant was ordered to pay the cost of the proceedings.

5548. Alleged misbranding of "Bell-ans."

Misbranding was alleged because of the false claim that it was a cure for vertigo, peritonitis, cholera morbus, alcoholism and seasickness, and a remedy for every derangement of the digestive organs. On February 5, 1917, the defendants pled a lack of guilty knowledge, and on April 10, 1917, the jury returned a verdict of not guilty to the charge of fraudulence, and judgment was entered accordingly.

5549. Adulteration of fruits in mustard.

The presence of added poisonous and deleterious substances—copper and salicylic acid—was held to constitute adulteration. On November 28, 1916, the defendants pled guilty and were fined \$25.

5550. Misbranding and alleged adulteration of rapeseed (mustard seed).

An article labeled mustard seed but shown to contain rapeseed, brown seeds and dirt was held to be adulterated and misbranded. On April 14, 1917, claimants having admitted the allegations, the product was delivered to them upon payment of costs and under \$1,000 bond, conditioned upon proper labeling.

5551. Misbranding and alleged adulteration of so-called mustard seed.

Substantially the same as No. 5550.

5552. Alleged misbranding of "Akoz."

Misbranding was alleged because of the claim that it was a remedy for stomach troubles, kidney troubles and rheumatism. The defendant urged that his product had been successfully used by many. On May 9, 1917, judgment was entered finding the defendant not guilty.

5553. Adulteration and misbranding of so-called mustard seed.

Substantially the same as No. 5550, with the exception that the product was sold by the U. S. marshal.

5554. Misbranding of "Stuart's Calcium Wafer Compound."

Misbranding was alleged because of the false claim that it was a cure for constipation, liver troubles, and all dis-

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orders arising from impure blood. On May 15, 1917, no claimant having appeared, the product was destroyed.

5555. Adulteration and misbranding of vinegar.

Substantially the same as No. 5505, with the exception that no claimant having appeared the product was sold at public auction by the United States marshal.

5556. Adulteration of beans.

Adulteration was alleged because of the presence of cull beans, decomposed beans, clumps of dirt and grains of wheat. On July 31, 1916, claimant having admitted the allegations, the product was released to him upon payment of costs and under \$250 bond, conditioned that the product be sorted and the unfit portion not sold for human consumption.

5557. Misbranding of "Stuart's Calcium Wafers."

Substantially the same as No. 5554.

5558. Misbranding of "Dr. Hilton's Specific No. 3."

Misbranding was alleged because of the false claim that it was a treatment for colds, coughs, grippe, bronchitis, and a preventive of pneumonia; also because the amount of alcohol contained therein was not stated on the label. On April 17, 1917, the defendant pled nolo contendere and was fined \$50.

5559. Adulteration and misbranding of apple cider.

A product labeled "Sweet Apple Cider" was held to be adulterated and misbranded because of the addition of water, sugar and tartaric acid; also because the quantity of the contents did not plainly and conspicuously appear on the label.

5560. Misbranding of "Sayman's Healing Salve" and "Sayman's Vegetable Wonder Soap."

An article labeled "Healing Salve," found to contain chiefly petrolatum, zinc, boric acid and camphor, and an article labeled "Vegetable Wonder Soap," found to be a cold process cocoanut oil soap, was held to be misbranded because of the false claims that it was a cure for piles and all forms of scalp and skin diseases. On May 1, 1917, the defendant pled nolo contendere and was fined \$40 and costs.

5561. Adulteration of milk.

Added water and decomposition were held to constitute adulteration. On June 7, 1917, the defendants were found guilty and fined \$50 and costs by the lower court, the case having been appealed to the Circuit Court of Appeals.

5562. Adulteration of fava beans.

Adulteration was alleged because of filth and decomposition. On October 14, 1916, claimant having admitted the allegations, the product was released to him upon payment of costs and under \$3,400 bond, conditioned that the product be sorted under proper supervision.

5563. Adulteration of grapefruit.

Grapefruit which had been colored to conceal inferiority was held to be adulterated. On October 3, 1916, claimants having consented, the product was sorted under proper supervision, the unfit portion destroyed and the good portion released to them.

5564. Adulteration of grapefruit.

Grapefruit which had been sweated to color it so as to simulate mature fruit and conceal inferiority, was held to be adulterated. On October 10, 1916, claimants having consented, the product was sorted under proper supervision, the good portion released to them and the unfit portion destroyed.

5565. Adulteration of grapefruit.

Substantially the same as No. 5564.

5566. Misbranding of cottonseed meal.

Misbranding was held because the guaranty of "protein 38.5 to 41.00 per cent minimum; ammonia, 7.50 per cent minimum; nitrogen, 6.18 per cent minimum, and crude fiber 12.00 per cent" was not substantiated by laboratory analysis, which showed protein 35.8 per cent; ammonia, 6.98 per cent; nitrogen, 5.73 per cent, crude fiber, 13.3 per cent. On May 21, 1917, the defendants pled guilty and were fined \$250 and costs.

5567. Adulteration of sardines.

Decomposition was held to constitute adulteration. On May 23, 1917, claimants having consented, the product was released to them under \$200 bond, conditioned that the unfit portion be destroyed under proper supervision.

5568. Adulteration of sardines.

Substantially the same as No. 5567; bond, \$500.

5569. Adulteration of milk.

Adulteration was held because of added water and the abstraction of butter fat. On June 4, 1917, the defendant pled guilty and was fined \$50 and costs.



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5570. Adulteration of milk.

The abstraction in part of butter fat was held to constitute adulteration. On June 6, 1917, the defendant pled nolo contendere and was fined \$25 and costs.

5571. Adulteration and misbranding of tomato paste.

An article labeled tomato paste was held to be adulterated and misbranded because of decomposition and added potato paste. On May 14, 1917, the defendant pled guilty and was fined \$15.

5572. Misbranding of salad oil.

A domestic article, so labeled as to give the impression as having been made from olive oil and imported, was held to be misbranded because of the addition of cottonseed oil. On May 21, 1917, the defendants pled guilty and were fined \$25.

5573. Adulteration and misbranding of lemon oil.

Substantially the same as No. 5520; defendants were fined \$50.

5574. Adulteration and misbranding of tomatoes.

An article labeled "Hartlove Brand Tomatoes" was held to be both adulterated and misbranded because of the addition of water. On May 18, 1917, claimants having consented, the product was delivered to them upon payment of costs and under bond, conditioned that the article be properly labeled.

5575. Misbranding of cottonseed meal.

Misbranding was held because the guaranty of "protein 38.62 per cent, crude fiber (maximum 10 per cent,) was not substantiated by analysis, which showed protein 37.19 per cent and crude fiber 13.22 per cent; also because the quantity of the contents was not plainly and conspicuously marked on the outside of the package. On June 11, 1917, the defendants pled guilty and were fined \$50 and costs.

5576. Adulteration and misbranding of hydrogen peroxid.

An article labeled as above but shown by analysis to contain 2.58 per cent hydrogen peroxid, 8.49 volumes available oxygen, 4.1 cc. free acids and 0.04 grams total solids, whereas the Pharmacopoeia calls for not less than 3 per cent hydrogen peroxid, 10 volumes available oxygen, acids not more than 2.5 cc., and the total solids 0.03 gram, was held to be adulterated and misbranded. On June 7, 1917, the defendants pled nolo contendere and were fined \$10 and costs.

5577. Misbranding of "Buckeye Prime Cottonseed Meal."

Misbranding was alleged because the guaranty of "protein 38.62 per cent, ammonia 7.50 per cent, nitrogen 6.18 per cent, and crude fiber 12 per cent (maximum), was not substantiated by analysis, which showed protein 35.0 per cent, ammonia 6.80 per cent, nitrogen 5.60 per cent, and crude fiber 14.88 per cent. On June 18, 1917, the defendants pled guilty and were fined \$100 and costs.

5578. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranty of "protein not less than 38.6 per cent, fiber not more than 12 per cent," was not substantiated by analysis, which showed protein 34.1 per cent and crude fiber 14.88 per cent. On June 9, 1917, the defendants pled guilty and were fined \$25 and costs.

5579. Misbranding of "Ice Wafers" and "Kakone Brand High Grade Cones."

Two articles labeled as above, shown to have been colored with tartrazine and croceine orange, were held to be misbranded because of the false statement on the label that the colors used were "guaranteed U. S. certified." On May 1, 1917, the defendants pled guilty and were fined \$25.

5580. Adulteration of walnuts.

Adulteration was held because of filth and decomposition. On January 13, 1917, claimants having admitted the allegations, the product was delivered to them upon payment of costs and under \$1,500 bond, in conformity with section 10 of the act.

5581. Adulteration of beans.

Adulteration was alleged because of filth and decomposition. On April 27, 1917, claimants having consented, the product was released to them upon payment of costs and under \$1,000 bond, in conformity with section 10 of the act.

5582. Adulteration and misbranding of beans with tomato sauce.

An article labeled as above but shown to contain soya beans and imitation tomato sauce was held to be adulterated and misbranded. On June 8, 1917, the defendants having admitted the allegations, the product was delivered to them upon payment of costs and under \$1,000 bond, in conformity with section 10 of the act.

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5583. Adulteration and misbranding of beans with tomato sauce.

Substantially the same as No. 5582.

5584. Misbranding of "Balsamo-Antifimico."

An article labeled as above, shown to consist essentially of water, alcohol, glycerin and plant extractive matter, was held to be misbranded because of the false claim that it was a cure for tuberculosis, bronchitis and catarrh. On January 23, 1917, the defendants pled nolo contendere and were fined \$75 and costs.

5585. Adulteration and misbranding of catawba grape juice.

A product labeled as above was held to be adulterated and misbranded because of the addition of water. On June 27, 1917, the defendants pled guilty and were fined \$100 and costs.

5586. Misbranding of "Mountain Rose Tablets and Herbaline."

Two articles labeled as above, the first containing boric acid, tannin, a zinc compound, unidentified alkaloidal material, vegetable extractive including resinous material, sugar (probably lactose), and acid insoluble material (apparently talc), and the second being essentially an ointment containing potassium carbonate, 15.5 per cent, strychnine, laxative plant extractive matter, resinous material and sugar, were held to be misbranded because of the false claim that they were a cure for sore throat, diphtheria, all diseases of the skin, and all diseases of women. On January 13, 1916, the defendants pled nolo contendere and were fined \$100 and costs.

5587. Adulteration of evaporated apples.

Evaporated apples, which were stale, sour and old, and badly infested with worms, bugs, and worm excreta, were held to be adulterated. On March 14, 1917, no claimant having appeared, the product was sold at public auction by the U. S. marshal.

5588. Supplement to Notice of Judgment No. 4842. Misbranding of "Abbott Bros. Rheumatic Remedy."

A hydroalcoholic solution of potassium iodid and extracts of drugs such as sarsaparilla and taraxacum was held to be misbranded because of the fraudulent nature of the labeling, "For Rheumatism of every form and stage, including Inflammatory, Sciatica, Acute, and for all uric acid troubles." On March 1, 1916, the defendants were found guilty by the lower court and fined \$200 and costs, and the case was then appealed to the Circuit Court of Appeals, and on May 22, 1917, the judgment of the lower court was affirmed.

5589. Misbranding of macaroni.

Macaroni which had been manufactured by the Western Macaroni Manufacturing Co. was held to be misbranded because of being labeled and packed so as to give the impression that it was a product of Italian manufacture. On January 28, 1915, the product was released to claimants upon payment of costs and under \$350 bond, conditioned in part upon proper labeling.

5590. Adulteration of chestnuts.

Adulteration was alleged because of filth and decomposition. On November 12, 1915, the defendants pled nolo contendere and were fined \$25 and costs.

5591. Adulteration of "Crown Skin Salve" and "Crown Pile Cure."

An article labeled "Crown Skin Salve," being a solid ointment containing mercuric oxid, calomel, petrolatum, volatile material, and having an odor of balsam and camphor, was held to be misbranded because the false claim that it contained no injurious ingredients and that it was a cure for all affections of the skin and scalp. The article labeled "Crown Pile Cure," consisting chiefly of cocoa fat, tannic acid, atropine, alum and talc, was held to be misbranded because of the false claim that it was a cure for piles. On December 11, 1916, the defendants pled guilty and were fined \$30 and costs.

5592. Misbranding of "King of the World and Family Liniment."

An article labeled as above was held to be misbranded because of the false claim that it was a remedy for rheumatism, cholera, diphtheria and heart trouble. On November 4, 1915, the defendant pled guilty and was fined \$2.

5593. Misbranding of "Parmint."

An article labeled as above was held to be misbranded because of the false claim that it was a cure for catarrh of the bowels, lung troubles and catarrhal deafness. On April 3, 1917, the defendants pled guilty and were fined \$200.

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5594. Misbranding of "Sulphurro."

Misbranding was alleged because of the false claims that it was a cure for all stomach, bowel, kidney, skin and blood diseases. On October 19, 1917, the defendants were found guilty and were fined \$150.

5595. Adulteration and misbranding of coffee.

An article labeled as coffee but shown to contain chicory was held to be adulterated and misbranded. On April 30, 1917, the defendants pled guilty and were fined \$20 and costs.

5596. Misbranding of "Blood Tabs."

An article labeled as above, consisting of brownish sugar-coated pills containing chiefly calcium carbonate and a small amount of gum benzoin forming a hard shell, while the interior was a pasty mass containing sulphates and carbonates of iron and potassium, also iodid of potassium, glycerin and reducing sugar, was held to be misbranded because of the false claim that it was a cure for nervousness, rheumatism and all conditions caused by impure blood. On May 22, 1917, the defendants pled nolo contendere and were fined \$25 and costs.

5597. Adulteration of tomato ketchup.

Decomposition was held to constitute adulteration. On May 18, 1915, claimants having consented, the product was released to them upon payment of costs and under \$500 bond, in conformity with section 10 of the act.

5598. Misbranding of "Palmer's Skin Whitener."

Misbranding was alleged because of the false claim that it was effective for clearing and brightening the complexion, for eczema, ringworm, tan, sunburn and freckles. On September 13, 1916, no claimant having appeared, the product was destroyed.

5599. Misbranding of "White Beaver's Cough Cream" and "White Beaver's Wonder Worker."

An article labeled "cough cream," shown to contain morphine, chloroform, creosote, ammonium chlorid, and methyl salicylate, was held to be misbranded because of the false claim that it was a cure for croup, pleurisy and all other diseases of the lungs. The "Wonder Worker," shown to contain 74.16 per cent alcohol, 1.70 grams per 100 cc. chloroform, morphine 0.09 grams per 100 cc., also camphor, capsicum, oil of turpentine, and free ammonia, was held to be misbranded because of the false claim that it was a cure for pleurisy, fever and ague, and all the summer complaints of children. On June 4, 1917, the defendants pled guilty and were fined \$300.

5600. Adulteration and misbranding of vinegar.

An article labeled "apple vinegar" but shown to contain artificially colored distilled vinegar or a dilute solution of acetic acid, was held to be misbranded and adulterated. On January 22, 1917, no claimant having appeared, the product was destroyed.

5601. Misbranding of gluten feed.

An article labeled in part, "Continental Gluten Feed," was held to be misbranded because the guaranty of "protein 29 per cent (minimum) and fat 12.5 per cent (minimum)," was not substantiated by analysis, which showed protein 25.16 per cent, fat 9.22 per cent. On October 18, 1916, the defendants pled guilty and were fined \$100 and costs.

5602. Adulteration of pork and beans.

Substantially the same as No. 5540.

5603. Adulteration and misbranding of birch oil.

An article labeled as birch oil but shown to consist largely of methyl salicylate and a low boiling point petroleum oil, was held to be adulterated and misbranded. On July 16, 1915, claimant having consented, the product was delivered to him upon payment of costs and under \$500 bond, in conformity with section 10 of the act.

5604. Adulteration of pepper.

Adulteration was alleged because of the presence of pepper shells. On March 14, 1917, no claimant having appeared, the product was ordered sold at public auction, by the United States marshal.

5605. Misbranding of "Watkins Vegetable Anodyne Liniment," "Watkins Female Remedy," and "Watkins Kidney Tablets."

Anodyne Liniment, shown to be essentially a hydroalcoholic solution of oleo resin, capsicum, camphor, saffrol (or oil sassafras), and opium, was held to be misbranded because of the false claim that it was a cure for diphtheria, rheumatism, la grippe and sore eyes. The Female Remedy was held to be misbranded, when shown to contain alcohol and unidentified extractive matter bearing emodin, because of the false claim that it was a remedy for all female complaints and diseases of women. Kidney

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Tablets, shown to contain buchu, oil of juniper, pichi, carbonate and nitrate, magnesium, calcium, silica and potassium, were held to be misbranded because of the false claim that it was a remedy for diseases of the kidneys and catarrh and inflammation of the bladder. On December 15, 1916, the defendants pled guilty and were fined \$30.

5606. Misbranding of "Reducine."

A product labeled as above, shown to consist essentially of pine tar carrying 1 per cent potassium iodid and a little alkali, was held to be misbranded because of the false claim that it was a cure for the worst cases of sprung tendon, bog spavin, and for reducing all enlargements. On July 27, 1917, the defendants pled guilty and were fined \$1.

5607. Misbranding of "Stone Root and Gin."

Misbranding was alleged because of the false claim that it was a cure for kidney, bladder and all urinary troubles. On August 30, 1915, claimants having admitted the allegations, the product was delivered to them upon payment of costs and under \$500 bond, conditioned that all labels and marks be removed from each bottle if they wished to recompound the article under proper supervision.

5608. Adulteration and misbranding of apples.

Apples labeled "Gano Extra" were held to be adulterated and misbranded because of decomposition and filth. On January 20, 1917, the defendant was found guilty and fined \$200.

5609. Adulteration of ketchup.

Substantially the same as No. 5597; bond \$1,000.

5610. Misbranding of "Nature's Creation Co.'s Discovery."

A product labeled as above, shown to be a hydroalcoholic solution containing magnesium sulphate and potassium iodid, with some emodin-bearing vegetable matter, and also accompanied by a tablet containing iron, sulphates, aloes and licorice, and coated with calcium carbonate, was held to be misbranded because of the false claim that it was a cure for tuberculosis. On June 29, 1917, the defendants pled nolo contendere and were fined \$100 and costs.

5611. Adulteration of red kidney beans.

Decomposition was held to constitute adulteration. On November 1, 1915, no claimant having appeared, the product was destroyed.

5612. Adulteration of apples.

Filthy and decomposed apples in leaky cans were held to be adulterated. On May 31, 1917, the defendants pled nolo contendere and were fined \$5 and costs.

5613. Adulteration of tomato pulp.

Substantially the same as No. 5533.

5614. Misbranding of "Radium Healing Balm."

A soap labeled as above, shown to contain sodium carbonate, sodium bicarbonate, sand and water, with odor of sassafras, was held to be misbranded because of the false claim that it was a cure for cancers, rheumatism, pneumonia and pleurisy. On August 25, 1917, the defendant pled guilty and was fined \$10 and costs.

5615. Adulteration and misbranding of a compounded physician's prescription and "Spirits Camphor."

Adulteration was alleged because the article was not made according to the physician's prescription and contained 8 grams camphor per 100 cc. in each 12 powders, 42 grains antipyrin instead of acetphenetidin, 65.6 per cent alcohol, whereas the Pharmacopoeia calls for not less than 10 grams camphor per 100 cc., 36 grains acetphenetidin in 12 powders and 90 per cent alcohol. Misbranding was held because it contained alcohol and failed to bear a statement of the quantity, and because antipyrin was used instead of acetphenetidin. On July 11, 1916, the defendant pled guilty to the charges of adulteration and was fined \$30. The charges of misbranding were not pressed.

5616. Alleged misbranding of "Tubercleclide."

An article labeled as above, consisting essentially of creosote carbonate with traces of creosote and water, accompanied by a plaster consisting essentially of rosin, petrolatum, atropine, with indications of tar oil and camphor, and also accompanied by "Metablitone," a solution of extractives carrying quinine, strychnine and indications of aesculin, was claimed to be misbranded because of the false and fraudulent statement that it was a cure for tuberculosis. On December 13, 1916, the defendants pled a lack of guilty knowledge and the case was dismissed.

5617. Adulteration of apples.

Filthy, decomposed apples contained in leaky cans were held to be adulterated. On May 15, 1917, the defendant pled guilty and was fined \$25.

CONVENTION SUPPLEMENT

THE AMERICAN FOOD JOURNAL

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Containing the Proceedings of the Twenty-second Annual Convention of the Association of American Dairy, Food and Drug Officials

Executive Committee — GUY G. FRARY, Chairman, Food and Drug Commissioner of South Dakota. GEO. L. FLANDERS, Counsel, Department of Farms and Markets of New York. E. F. LADD, Food Commissioner of North Dakota, and ex officio, the president and the secretary of the association.



Benjamin L. Purcell, of Virginia

Committee on Co-operation — J. S. ABBOTT, Chairman, Chief of the Office of State Co-operative Food and Drug Control, Federal Bureau of Chemistry, Washington, D. C., R. E. ROSE, State Chemist, Department of Agriculture of Florida. FRED L. WOODWORTH, Dairy and Food Commissioner of Michigan.

Officers of the Association of American Dairy, Food and Drug Officials to Serve During 1918 and 1919,
Elected at the Chicago Convention, August 27, 28, 29 and 30, 1918

President—BENJAMIN L. PURCELL, Dairy and Food Commissioner of Virginia.

First Vice-President—JAMES SORENSON, Dairy and Food Commissioner of Minnesota.

Second Vice-President—E. L. BARNHOUSE, Food and Drug Commissioner of Missouri.

Third Vice-President—THOMAS HOLT, Dairy and Food Commissioner of Connecticut.

Treasurer—GEORGE J. WEIGLE, Dairy and Food Commissioner of Wisconsin.

Secretary—JOHN B. NEWMAN, Superintendent of Foods and Dairies of Illinois.

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PROCEEDINGS

OF THE

Twenty-second Annual Convention

OF THE

Association of American Dairy, Food and Drug Officials

Congress Hotel, Chicago, Illinois

August 27, 28, 29 and 30, 1918

(Official Report)

FIRST SESSION.

TUESDAY MORNING, AUGUST 27, 1918.

The meeting was called to order by the President, Mr. James Foust, at 10:00 a. m.

PRESIDENT FOUST: The Association will now come to order, and I would ask all to rise, and the Reverend Haslem will offer an invocation.

REVEREND HASLEM: Almighty and eternal Father: we give Thee thanks for all the benefits which Thou hast bestowed upon us and upon all men for their creation, preservation, and all the blessings of this life, especially that Thou hast been pleased to call us to be a part of this great nation founded upon the principles of liberty and freedom and of social justice and righteousness. Bless this Association now assembled in convention. Give wisdom to their deliberations and helpfulness to their activities. Thou hast been pleased to bless us abundantly with all the material things of this life. Give us wisdom to use them wisely, to conserve and not to waste, and all to cultivate throughout this great country the spirit of thrift and diligent sacrifice and self-denial. Give the president of this country and all his advisors the spirit of wisdom to guide and control the affairs of this country during these troubled days. Protect, we beseech Thee, our soldiers and sailors and all who are engaged in wartime service. Defend them from all dangers by air and land and sea. Give them courage in the day of battle and grant in Thy good time to our army and to those of our allies sure and certain victory, resulting in a peace in which the Fatherhood of God and the Brotherhood of Men shall be acknowledged throughout all the world. Hear these our prayers, we beseech Thee, for the sake of Thy Son, our Lord and Savior, Jesus Christ. Amen.

PRESIDENT FOUST: We will now have the address of welcome by Mr. H. H. Merrick, Vice-President, Chicago Association of Commerce.

ADDRESS OF WELCOME.

By H. H. MERRICK,

Vice-President, Chicago Association of Commerce.

MR. H. H. MERRICK: It is an honor and a pleasure, ladies and gentlemen, and Mr. Chairman, to have this convention in Chicago. The Association of Commerce and all Chicago makes you most welcome. We are glad to have you, in the old-fashioned phrase, within our gates. We are glad that we haven't any gates, because Chicago is open to all the world. We are especially honored in that you are here in your

Twenty-second Annual Convention as I understand it. And through the twenty-two years it has happened that I have had some opportunity in my contact with the food divisions of trade and industry, to know something of the growth of your organization, the building up of sentiment throughout the states, and the results accomplished.

It would be a waste of time for me to attempt to talk to you in any sense technically. This is just a few words of welcome and of appreciation on behalf of the great Central West, of the things that you all have done, and of confidence that you will do much more in the future than you have accomplished in the past.

In these days even a few words of welcome bear upon the war and the winning of the war. We are told on all sides that food will win the war, and again that ships will win the war, and again that men will win the war, and I said the other day that, after all, women will win the war because they have to do with the conservation of everything at home, and all of that centers back on this great problem of food, the building up of the man and woman-power of the nation, and through that and the sentiment that is built thereon, will ultimately come within the year, as General March says, the winning of the war; that we today are able to send hundreds of ships abroad carrying the food that is necessary for the armies of the allies, for the men and women who otherwise would starve at home, that we today are able to build up the morale of the great British Empire because of the confidence they feel that starvation and want can by no possibility reach them so long as our bridge of ships and the British Navy, with the United States Navy, shall protect and make sure the arteries of trade across the seas. That this has been possible within the short period of a year is due to the tremendous efforts put forth in the last twenty years in the building up of this, our greatest industry—food, its by-products and its allied trades and industries. For, after all, we do not boast, as Germany did, that we are the mailed fist that stands for might as opposed to right, that we are more than one hundred million people prepared to conquer the world. Even today with our army approaching three million men and fully three million in the navy, we boast that we are the granary, the storehouse, the source of food supply, the source of democratic safety, the source from which comes the safe and sane thought of the world in this time of strain and struggle.

You all have come from coast to coast I understand. You have passed through the greatest grainfields, cornfields and wheatfields, in harvest and otherwise, that our country has ever seen. Only a few days ago I went down through the central states and then on to Washington, most of the time in daylight riding, and then again I drove through Indiana and through Iowa, up through Wisconsin, by motor car, and it was impressed upon me as it unquestionably is upon all of you, that the wonder of this nation is in the farming districts. For some seventy-five miles by motor driving down through Indiana I do not believe that I saw fifteen acres of waste land, hardly a hedgerow that had weeds or waste of any kind in sight.

Remember, that when this war is ended—and I hope that the prediction is well within the realm of safety now, within the year—that the world will need our supplies, that the world must be assured beyond the peradventure of a doubt, that all that we send out in international trade is rightly made and manufactured and shipped, and honored in that task, so far as the matter of food supplies and the upbuilding of sentiment for the proper manufacture of products. The task is yours. No more important task was ever committed to any body of men, official or otherwise, since our nation was first built, and therefore in conclusion I say to you that we of Chicago and the center of the United States, where the heart really pulses through the railway lines and the telegraph lines, where men meet in conference as do you, that we of Chicago take off our hats to you of the Food Control Boards of the States and pay you all honor, feeling that with you lies the advancement of the United States along right lines when this war is ended. (Applause.)

PRESIDENT FOUST: The response to the address of welcome

will be given by Mr. Benjamin L. Purcell, Dairy and Food Commissioner, Virginia. (Applause.)

RESPONSE TO THE ADDRESS OF WELCOME.

BY BENJAMIN L. PURCELL,
Dairy and Food Commissioner, Virginia.

MR. B. L. PURCELL: Mr. President, Ladies and Gentlemen: On behalf of the Association of American Dairy, Food and Drug officials, I desire to thank Chicago for its cordial and earnest welcome to its wonderful city. If perchance each one of us does not secure that full amount of pleasure and profit that we have anticipated, then I am certain the fault will not lie at the door of our hosts, but rather because we are made of that kind of clay that does not readily mould itself into an appreciation of exceptional opportunities.

You may know that in the land of sunshine, flowers, beautiful women and some chivalrous men, that we consider ourselves very excellent judges of what constitutes hospitality and chivalry. As an illustration of mid-west chivalry, it so occurred in Virginia last winter at an exceptional time when our sunny soil was covered with ice and sleet, that I had the honor of having a visit from a distinguished citizen of Illinois. Our city of Richmond is built on seven hills and, like Rome, has its Tiber known as the James, flowing at the foot of the hills. Some of these hills are pretty steep and you have to go up and down a hill in emerging from some of our buildings. Now, my distinguished friend—and he is a friend of all of us who have the honor and pleasure of knowing him—fell on the pavement. His feet promptly flew from under him and he occupied a place we all occupy under similar conditions, but to my horror, he started rapidly for the Tiber. Fortunately, the Tiber was surrounded by a stone wall. He gained speed as he proceeded, when suddenly there appeared immediately ahead of him a lady of two hundred pounds or more, picking her way carefully over the icy pavement. Now, our John has steered this august body through many trying situations, but do his best, he could not pass the lady. He struck her center of gravity and she dropped into his lap. That seemed but to accelerate the descent until the stone wall was reached, and suddenly they were parted. John bounded to his feet and assisted the lady as well as he could to arise, then with that Chesterfieldian air and gracious smile for which he has become famous, said: "Miss, we stop here." (Laughter.) The lady glancing first at the river, then glaring indignantly at our distinguished secretary, said: "Sir, you dare not go any further." (Laughter.)

I know it is not necessary for me to remind this body of serious men that the purpose of our visit is not for sightseeing and pleasure, but to gain a broader view of our duties, and to seek information which will enable us to take the greatest measure of benefits back to the people we serve. Much of our deliberations will be given over to means whereby we can carry greater aid to our government, bearing in mind all the time that in order to meet after-war conditions it will be necessary and incumbent upon us to carry the best thought and most constructive effort into our future operations. Much of the old order has passed, happily, and perhaps never to return. Centralization of authority has been turned over to our National Government, with the constant faith, however, that when it has served its purpose our constitutional rights will be restored to us. We have no doubts or fears for the future. We know that our patriotic sacrifices made to make the world safe in which to live are guaranteed to us by that sacred emblem, the Stars and Stripes, hallowed and sanctified by the blood, aye, of our boys and our girls. No true, red-blooded American permits himself for a moment to doubt the final outcome of this struggle. He stands ready at all times to convert his every patriotic impulse into constructive action for the preservation and perpetuation of democracy. We are glad, my friends, I know, to be here in Chicago, to be invited here to hold our annual meeting, for we are fully appreciative not alone of the cordial hospitality which has been extended to

us, the commercial supremacy of the city, its leadership in science, in art and literature, but above all, that wonderful example of patriotic service which this city and this state has shown to the nation. (Applause.)

PRESIDENT FOUST: We have heard the address of welcome and the response to it, and at this time I will declare the twenty-second annual convention of the Association of American Dairy, Food and Drug Officials open in due and regular form for the transaction of the business as set forth in the program. At this time I will appoint the Committee on Credentials and the Committee on Resolutions. The Credentials Committee will be Frank Jackson, George J. Weigle, and Captain R. E. Rose. The Committee on Resolutions will be Dr. William Frear, Benj. L. Purcell and Fred L. Woodworth.

I think it is important that the Committee on Credentials get in touch with the secretary, so that the list can be properly prepared, that we may go right along and not lose any time.

The next order of business is the president's address. (Applause.)

THE PRESIDENT'S ADDRESS.

BY JAMES FOUST,
Dairy and Food Commissioner, Pennsylvania.

MR. JAMES FOUSTS:

Mr. Chairman and Gentlemen: This twenty-second annual convention of the Association of American Dairy, Food and Drug Officials is held at a moment when the eyes of men everywhere are turned toward the struggle now on in Europe. We behold a world in arms. The forces of right are facing the armies of evil. All that America stands for is at stake. The freedom for which the pioneers died is now defended by our sons. I do not think the result is doubtful. Still, all might be lost if it were not for the vast resources of America, the skill of her artisans, the wisdom of her public servants and the valor of her young men.

As food officials we have long realized that without large shipments of foodstuffs to Europe our Allies would fail. Always dependent upon the outside world for much of their food, neither England nor France could long stand out against the forces of the kaiser if it were not for the generous stores shipped to them by our country. It is a great pleasure to be told by Food Controller Herbert Hoover that the sacrifices of the American home, added to the efforts of the American farmer, have removed fear from the minds of our Allies. For this year, at least, the danger has passed.

While the war lasts and the need exists Americans must continue to practice self-sacrifice. It is our duty to conserve foods and safeguard their wholesomeness, and in this field our responsibilities are large. It is the patriotic duty of the American farmer to produce the greatest possible quantity of food. It is the duty of the American household to eat less of the foods most urgently needed in Europe and which may be most safely exported. Americans have already made large changes in their daily diet in order to help their friends "Over There." This, I am sure, they will continue to do and that without any decrease in their health, their strength or their fighting spirit.

The least we can do is to keep ourselves informed, to remain in touch with all sides of this important matter and to keep the people informed concerning their duties and the best way to perform them. In all things we are expected to be helpers to Food Controller Hoover and his subordinates in our respective states. What our constituents have a right to expect from us is enlightened fidelity, joined to genuine patriotism.

Our program has been planned with the purpose of getting us in touch with the latest developments of the food problem and to organize such activities as are likely to aid in its wise and beneficial solution. We have with us authorities of international fame who will acquaint us with the needs of our Allies. Leaders of the National Food Administration are

also here to inform us concerning its desires and purposes. Experienced men of our own group have been asked to increase our knowledge.

I shall not trespass upon the subjects assigned to the several speakers. But I do earnestly ask your careful attention, your deep interest and your full co-operation in the work of the convention. Every subject on the program is of vital interest. Let every official be present every moment. There will be plenty of time after the general sessions, for committee work and private conferences. Let each feel that the work is his own. Let us be united upon the main things, and avoid waste of time and strength upon differences about little matters.

Allow me in closing to emphasize two or three things. Let us use all our official powers and personal influence, and make every adjustment or regulation that can be made to save for human use every available ounce of wholesome food. While we aid in readjustment, let us continue to insist upon honesty. Let food be sold for exactly what it is. To encourage one part of the people to fool the rest of the people is not the way to prepare them for sticking together in the last and hardest hour of the fight.

Let us rally to Mr. Hoover's support in every way we can. He has a hard, hard job. We can help him. Let us fight by his side.

The next subject on the program is "Canadian Food and Drug Control—Adulteration and Misbranding," by Dr. A. McGill, Laboratory, Inland Revenue Department, Ottawa, Canada. Dr. McGill (applause).

CANADIAN FOOD AND DRUG CONTROL—ADULTERATION AND MISBRANDING.

BY DR. A. MCGILL,

Laboratory, Inland Revenue Department, Ottawa, Canada.

DR. A. MCGILL: Mr. Chairman, Ladies and Gentlemen: I can only account for the fact that my name appears on the program at all, under the impression that you want to hear a voice from Canada. I can assure you that as long as I have been connected with the Inland Revenue Department—and that covers a period of nearly forty years—we have been admirers of the work done along food and drug control lines by yourselves. Since this dreadful war has begun our appreciation of the important part that the United States must play and has played and is playing in this, is immeasurably increased.

We, of course, have been in this war from the beginning. We have nearly five hundred thousand Canadians in the field, at the front or preparing to go there, and it was with a great deal of pleasure, to which the word "joy" but feebly applies, that we learned of the decision of the United States to back us up, to cast in their lot with us and to help to see the thing through.

Another reason why I can imagine that it is only for the purpose of hearing my voice that my name appears here is because of the fact that you have given me so kind a subject, the subject of Canadian Food and Drug Control—Adulteration and Misbranding. This subject covers so tremendously wide a field that if I were to attempt to do myself justice I should, I am quite sure, occupy far too large a portion of the time of the assemblage at this convention.

Most of you, certainly most of the older men here, must be more or less familiar with the work done in Canada in connection with this subject. Since 1887 we have issued reports in the form of bulletins, giving an account of the nature and extent of the work that we do. I do not think that it would be wise for me to attempt to discuss in detail so very wide a subject as that which has been suggested. There is one thing, however, in regard to which I must congratulate you, and that is that you do not call everything adulteration; you recognize a difference between adulteration and misbranding. It isn't always a wise thing to exaggerate a recognized evil.

If we didn't distinguish between manslaughter and murder I am very sure that many cases of palpable carelessness would pass without any punishment whatever. I think it very wise that the United States has made a distinction between adulteration and misbranding. You know all words have at least three senses. They have what I may call the absolute or literal sense, the legal sense and the social sense, and sometimes the social meaning attached to a word exceeds in severity the legal meaning, and I think for that reason, which I shall not further amplify, a distinction between different forms of sophistication of food is very desirable. Humanity the world over has a great deal in common, especially on the physical side. I wish that on the intellectual and moral sides there was more unanimity, and that that unanimity was in line with our own view of things.

I thank you, gentlemen, for the opportunity of addressing you, and if I feel during the course of the convention that any subject touched upon should lend itself to possibly a word or two from myself—I am now a very old man and I have had a very long experience with this subject, and it is just possible that a word or two in the course of discussions may occur to me. In the meantime I wish you every success, and I am sure that I am safe in predicting it. (Applause.)

PRESIDENT FOUST: We will now hear from Lieutenant Sauvage, who represents the French High Commission, Washington, D. C. (Great applause.)

HOW AMERICAN FOOD CONSERVATION HAS AIDED THE ALLIES.

BY LIEUT. G. D. SAUVAGE,

French High Commission, Washington, D. C.

LIEUTENANT SAUVAGE: Mr. Chairman, Ladies and Gentlemen: I wish first of all to thank the committee for its very kind invitation, and I want to thank you for your welcome. Of course, I know it is not given to me alone, but I feel it is given above all to France (applause) whose son I am.

I wish to bring to you the greetings, the thanks, the gratitude of the French soldiers, of the people of France, for what you have done. This war has brought about a very strange situation. You would not guess it, but I am a Catholic priest, having been for four years at the front, not as a chaplain but as a fighting man, and today I have no knowledge of any business or of farming; I am supposed to address you on very technical questions. I prefer to talk to you on what is the point of view of the soldiers at the front in regard to your work. You may think that the soldiers don't think of you, and yet most of the fighting spirit of the soldiers at the front is made up of your spirit here, and of your efforts. There is a strange thing in this war. It is that it is not physical strength that is winning the war; it is the morale of the man, and you may well realize that the morale of the man in a large way depends upon the feeding of the man. If we have stood so much so long, it is because we have been all the time well fed, and you would be surprised to hear that when the men are well fed they are grateful for what is being done for them, not so much because they are being well fed but because they understand that the people at home are doing their best, so that they may be better fed, that the people at home appreciate the work they are doing.

Then, there is another and more important consideration. This war is not a war of fighting men alone, it is a war of nations, and this war will not be won by the soldiers alone; we soldiers realize that. It will be won, above all, by the people at home. Someone has said that the women have to play a great part in this war. I may tell you in all frankness that so far as France is concerned, it is the women who have won the war up to this time and it is the women who will win the war (applause). It is because of the fact that the women of France have stood the awful sacrifices they have had to stand during these four years; it is because in spite of their suffering they have made up their mind that they shall take the place of the men in the factories, in ammunition factories, in the field,

and everywhere, so that business may go along as usual. It is because the women of France have done this that the soldiers of France have been called brave. They have been brave because the women have been even braver than the soldiers, but if the people are to continue the war longer they will have to know that they will have all that is necessary for their maintenance, and especially in the way of food.

You have heard a great deal about the courage of the French soldiers. I could say perhaps more than you have heard. You cannot say too much about them, but you have not heard perhaps about the sacrifices of the people at home. Do you know that for the last year our ration in the way of bread has been very singularly diminished? You know what bread means to a Frenchman. We need about eight hundred grams of bread a day. It has been reduced, for the civilian population in France, to three hundred grams. Of course the soldiers have been privileged; they have six hundred grams a day. Of course, we should not take anything away from the soldiers, but at the same time everything has been diminished in the same proportion.

You have heard of the sugar situation in France. There was no more sugar. If you should go to a grocery for sugar instead of sugar they would give you saccharine. Today saccharine is restricted. This people who are suffering so much are people who have had, since this war has begun, one million and a half men killed and one million and a half maimed or taken prisoners. They are a people who are ready to suffer more, if necessary, but I am glad to tell you that we think our suffering for a great part is at an end, because you have decided to take your share in this great war, and not only have you decided to take your share, but you have taken your share as becomes America to take it, giving everything you have, giving yourselves by millions, and giving at the same time your supplies without counting. Now I want to say to you that the French people appreciate fully what you are doing. Not later than this morning I had a letter from a French widow whose husband was killed in 1915. He was at the head of a beef factory in the north of France. She is 26 years old, left with three children, and she has lost from thirty to thirty-five million in property in the north of France. She tells me: "Since you have the opportunity of seeing the American people, tell them that we love them. Tell them that we are grateful to them for what they are doing, and ask them to love us and to love us more and more," adding with that pride which is characteristic of the French today, "We deserve it." And I think the people of France—not only the soldiers—do deserve it.

You have a large part to play in this war. The morale of your men depends on what you will do for them, and the morale of your men depends on the way in which you will stand this war. You must not become tired of the war. I am not angry at the newspapers, but in the last few days they are becoming too optimistic, I feel. Of course, I have no special knowledge about things, but judging as a man who has been at the front for three or four years it seems to me this war will be still a long war. But we will not think of the time it will last; we must think only of one thing—to win the war whatever time it may last and whatever sacrifices we may be called upon to make. (Great applause.)

We must work today. We must save and be willing to sacrifice everything as if the end of the war depended upon us. Many people have asked me, "How long do you think the war will last?" I say, "It will last as long as you wish, because it will depend on the sacrifices you make," and we must today be decided to face a long war. Every one, I think, has his duty and should do his best. Every one, I think, at this time should make a patriotic examination of conscience and ask himself if during the day he has done everything he could to win the war, to see if something could not be done, and make a resolution to do better for the day after, because whatever your occupation may be—of course, I speak like a soldier for the time being—but for me there is only one business today, and it is to win the war.

Now your efforts in saving, in supplying, have been wonderful. People in this country do not realize what has been

done by the administration. - Of course they are glad to know that there are one million five hundred thousand Americans in France today, they think it is a great thing. It is a great thing, but what is greater than this is the fact that these men are being supplied, abundantly supplied, with everything for every day and for years to come. Your administration has done it, and you have done more than we of France thought you could have done. We did not expect it from America, but the day it was announced that you had landed a number of men, a company of them well supplied, that day we had a vision of our coming victory. We never despaired, but on that day we were certain we would win this war, and winning it as it should be done, not by an ordinary victory, but by a complete victory. (Applause.)

I ask you to make the soldiers at the front feel that you are interested in them. They are interested in you. I ask you to make it your business, and your only business, to win the war; that you are heart and soul with them, that you have decided that this war will be fought to a finish, that you will not get tired of it if it is long, that you have decided that it will be ended only by complete victory, so that the men who have shed their blood, those who have given their lives, shall not have died in vain. (Great and prolonged applause.)

PRESIDENT FOUST: At this time I want to appoint Mr. J. S. Abbott as Press Committee. I would like if Mr. Abbott will look after the newspaper people and supply them whatever will appeal to them and the papers will print, and represent this Association in that capacity.

The next order of business is the appointment of committees. That has been taken up and disposed of, so that we will now hear the report of the Secretary, John B. Newman, Superintendent of Foods and Dairies, Illinois. (Great applause.)

SUPERINTENDENT JOHN B. NEWMAN: Mr. President, Ladies and Gentlemen: The report of the secretary is not a very interesting paper to the delegates, for it is merely the recorded acts of the Executive Committee during the year.

REPORT OF THE SECRETARY.

BY JOHN B. NEWMAN,

Superintendent, Division of Foods and Dairies, Illinois.

Immediately after the adjournment of the convention at Atlantic City the newly elected Executive Committee, with the exception of Mr. Frary, met with the President and Secretary.

It was moved, seconded and carried that the Secretary be authorized to enter into negotiations with Mr. R. G. Gould, publisher of the American Food Journal, to arrange for the best terms for the printing of the proceedings of this convention in pamphlet form, and if arrangements could be made the price would be submitted to the Executive Committee for approval and then Mr. Gould would be authorized to go ahead and print the same and he should be permitted to print the entire proceedings in the September issue of the Journal.

It was moved, seconded and carried that the Treasurer be authorized to pay the stenographer one hundred and forty dollars (\$140.00) for taking down the proceedings and furnishing us two copies of the record.

The President and Secretary were authorized to look over the different applications for the next convention and make recommendations to the Executive Committee.

Resolution to President Wilson. Acknowledgment from Mr. Hoover.

Adjourned, to meet subject to call of the President.

Dated August 1, 1917.

Breakers Hotel, Atlantic City, N. J.

During the month of September, 1917, the President went

over the applications of the different cities wishing the next convention and sent a communication to the Executive Committee to vote upon the different places. It was decided to hold the convention at Chicago, at the Congress Hotel, August 27, 28, 29 and 30, 1918.

October 1, 1917, the President sent out a letter calling a meeting of the Executive Committee to be held at the Congress Hotel, Chicago, on March 22, 1918, and invited each member of the Executive Committee, as well as the President and Secretary, to ask another member to be present, in this way getting the opinion of a greater number of members of the Association on matters up for discussion.

March 22, 1918, the Executive Committee met, pursuant to the call of the President issued October 1, 1917, at the Congress Hotel, Chicago.

Present: James Foust, Benjamin L. Purcell, Guy G. Frary, Carl L. Alsberg, J. S. Abbott, E. F. Ladd, H. E. Barnard, George L. Flanders, George J. Weigle.

The Secretary arrived upon the scene a little late, just returning from a trip to Florida. The matter of the program was the first thing taken up for discussion. It was the opinion of everybody present that the program should pertain to topics that seemed to fit the peculiar times and conditions. Everybody was heard upon the subject. A tentative draft of the program was drawn up and approved.

The Secretary was authorized to get into communication with the people who were expected to be on the program, so that he might secure their acceptances at as early a date as possible.

The Committee thought well of the arrangement of the program carried out by the National Wholesale Grocers at their last annual convention in holding only morning sessions and keeping the afternoons open for opportunities to visit the many food manufacturing, storing and dispensing establishments in this large food center and also for committee work.

The sessions are to begin at nine o'clock in the morning and to be carried on until one o'clock p. m. Tuesday and Thursday are to be known as open meeting days, the convention being open to anybody, but it was thought best that Wednesday and Friday should be open for executives only. Times are so different, so many intricate problems are facing us, that it was recognized that we must give considerable time to executive sessions, going over matters that should not be open to the public, at least not until after they had been fully decided upon, but certainly not during the period of their presentation, discussion, adoption or rejection.

It was decided that the Association should try to keep its members together all through the convention so that they might be available for call at any minute for committee work or executive session.

It was decided to ask everybody to attend what would be called the Association dinner in the Florentine room of the Congress Hotel on Thursday evening, August 29, and that we would have a program fitting the occasion.

The Secretary was authorized to call upon different people in the Association to take the place of anybody named on the program who for one reason or another would be unable to take part.

The Secretary was authorized to arrange for the printing of the program and the badges and arrange the menu for the dinner.

The Committee adjourned.

The Secretary started in at once to arrange this program and has had the usual luck. Quite a few people listed were not able to be present. Others gave tentative acceptances and later on, on account of matters over which they had no control they notified us they could not attend. In this respect I wish to say that the notices came to me so late on two items that I could not change them on the program.

I have taken up everything with the President before coming to any decision and have kept the Executive Commit-

tee advised of everything but the substitution of people on the program.

Owing to the great amount of outside work that many Commissioners are called upon to do, owing to the depletion of our forces, and owing to the increase in railroad rates, the acceptances that we have had on the program of the executives to be present at the convention, I think, show a wonderful spirit of appreciation of the work and a desire to co-operate. I wish to take this opportunity to thank everybody on the Executive Committee and on the program for their co-operation with me, in helping me to get all the topics accepted and in having prominent people to take part in the discussions.

Respectfully submitted,

JOHN B. NEWMAN,
Secretary.

I offer that for the secretary's report.

PRESIDENT FOUST: You have heard the report of the Secretary. What is your pleasure?

MR. R. E. ROSE: (Florida): Mr. Chairman, I move that we adopt the report of the Secretary.

MR. B. L. PURCELL: I second the motion.

(Motion put by Chair, voted on, carried.)

(The Chair appointed Mr. Frank A. Smith of Pennsylvania to look after visitors and delegates and keep in touch with the local committee.)

PRESIDENT FOUST: At this time we will hear from Mr. Smith (applause).

MR. FRANK A. SMITH: Mr. President, ladies and gentlemen, this is so unexpected that I really do not know how to answer. I want to say that my friend, Mr. Foust, from Pennsylvania, is going a little strong when he tells you all the things that I can do, but I want to say that my heart is right, and if I can in any way at all help the convention along in the matter of entertainment, I want you to know that I am here to do that. I have had that place in Pennsylvania at most of our conventions, and I see a few faces here whom I recognize, and they will tell you I have made it a habit to attend conventions and try to help people have a good time. I look for a good time myself, and know where to find it, so if you people will all stick around close when there is something to do, we will try to start something for you. It is very unkind of Mr. Foust to embarrass me in this way, and I hope that he won't do it again. Mr. Foust, I will certainly try to live up to this wonderful reputation you have given me this morning.

PRESIDENT FOUST: Mr. Smith, you have your job now and I know you will do the work and do it well.

Before the Secretary makes a statement about some social affairs, we are going to take up some of the program for the second session.

(The Secretary made announcements regarding the entertainment provided for the members and visitors.)

PRESIDENT FOUST: The next order of business is the report of the Treasurer, George J. Weigle, Dairy and Food Commissioner, Wisconsin (applause).

REPORT OF THE TREASURER.

BY GEORGE J. WEIGLE,

Dairy and Food Commissioner, Wisconsin.

1917. July 31, 1917-July 31, 1918.	
July—	Receipts. Disbursements.
31—Balance on hand	\$250.93
31—Alabama dues for 1917.....	10.00
31—Florida dues for 1917.....	10.00
31—Georgia dues for 1917.....	10.00
31—Indiana dues for 1917.....	10.00
31—Iowa dues for 1917.....	10.00
31—Maryland dues for 1917.....	10.00

31—Missouri dues for 1917.....	10.00
31—Nevada dues for 1917.....	10.00
31—Oregon dues for 1917.....	10.00
August—	
1—Connecticut dues for 1917.....	10.00
1—Registration fees and copy of proceedings:	
G. F. Mason.....	2.00
George P. McCabe.....	2.00
John F. Ashcraft.....	2.00
A. L. Harris.....	2.00
R. G. Gould.....	2.00
A. M. Morey.....	2.00
Jay D. Miller.....	2.00
Paul F. Webster.....	2.00
Wm. T. Creasy.....	2.00
K. K. Bell.....	2.00
W. Parker Jones.....	2.00
Charles J. Tressler.....	2.00
W. C. Kirk.....	2.00
J. R. Chittick.....	2.00
T. J. Bryan.....	2.00
L. F. Brown.....	2.00
Frank A. Smith.....	2.00
J. G. Sullivan.....	2.00
G. A. Baker.....	2.00
W. D. Bigelow.....	2.00
C. H. Porter.....	2.00
1—New Jersey dues for 1918.....	10.00
1—Nebraska dues for 1917.....	10.00
9—Voucher No. 2 to Greenduck Co.....	\$ 26.00
September—	
6—New York dues for 1917.....	10.00
26—Voucher No. 3 to North Public Health Bureau	15.50
26—Voucher No. 4 to Ft. Dearborn Printing and Binding Co.....	24.00
27—Voucher No. 5 to General Shorthand Reporting Co.	215.99
27—Voucher No. 6 to Ft. Dearborn Printing and Binding Co.....	9.50
October—	
22—Voucher No. 7 to American Food Journal	100.00
December—	
6—Kansas dues for 1917.....	10.00
21—New Hampshire dues for 1917.....	10.00
24—Oklahoma dues for 1917.....	10.00
31—Voucher No. 8 for postage.....	3.00
1918.	
February—	
15—North Carolina dues for 1917.....	10.00
19—Mississippi dues for 1917.....	10.00
23—Virginia dues for 1918.....	10.00
21—Iowa dues for 1918.....	10.00
20—Kentucky dues for 1918.....	10.00
28—Texas dues for 1918.....	10.00
28—Louisiana dues for 1918.....	10.00
28—Connecticut dues for 1918.....	10.00
28—Dept. of Agric. dues for 1918.....	10.00
March—	
1—California dues for 1918.....	10.00
4—Wyoming dues for 1918.....	10.00
4—Minnesota dues for 1918.....	10.00
4—Voucher No. 9 to John B. Newman..	13.51
4—Voucher No. 10 to Western Union Tel Co.	21.95
6—Michigan dues for 1918.....	10.00
11—Nebraska dues for 1918.....	10.00
11—Rhode Island dues for 1918.....	10.00
11—North Dakota dues for 1918.....	10.00
11—South Carolina dues for 1918.....	10.00
16—Illinois dues for 1918.....	10.00
16—New York dues for 1918.....	10.00
16—Tennessee dues for 1918.....	10.00

19—Georgia dues for 1918.....	10.00
25—Pennsylvania dues for 1918.....	10.00
April—	
4—Ohio dues for 1917 and 1918.....	20.00
March—	
18—Voucher No. 11 to Mercury Pmt. Co..	6.50
April—	
17—Washington dues for 1917 and 1918..	20.00
May—	
6—Maryland dues for 1918.....	10.00
6—Wisconsin dues for 1918.....	10.00
7—Nevada dues for 1918.....	10.00
23—South Dakota dues for 1918.....	10.00
24—Idaho dues for 1917 and 1918.....	20.00
July—	
27—Preston and Rounds Co. (stamps)....	.75
	<hr/>
Total Receipts	\$773.68
Total Disbursements	\$435.95
	<hr/>
Balance on hand.....	\$337.73

Respectfully submitted,
GEO. J. WEIGLE,
Treasurer.

PRESIDENT FOUST: You have heard the report of the Treasurer. What is your pleasure, gentlemen?

MR. B. L. PURCELL: Mr. President, I move that the report of the Treasurer be received and filed.

(The motion was seconded and carried.)

PRESIDENT FOUST: At this time we will appoint an Auditing Committee of two to go over the Treasurer's report. I therefore appoint Commissioner Jackson and Commissioner Purcell of Virginia.

The next order of business is posting of amendments to the constitution and by-laws. That will come in the report of the Committee on the Constitution and By-laws. Is the credentials committee ready to report? (The committee was not ready.) Then we will go over to tomorrow's program and take up the report of the Committee on Co-operation. We will hear from Commissioner Purcell at this time.

MR. B. L. PURCELL: Mr. President and Gentlemen: Mr. Abbott has been doing this work since he was a little boy, and he has never got any credit for it. Some one of us commissioners have been appointed chairman and have done nothing. I want to show you how magnanimous I am, and to give the reward where it is due, and I know that you will be very much more interested in hearing from the gentleman who wrote the report than in hearing from me, who gave very little assistance in getting it up, I will ask Mr. Abbott to make the report.

PRESIDENT FOUST: We will now hear the report from Mr. Abbott (applause).

REPORT OF THE COMMITTEE ON CO-OPERATION.

By J. S. ABBOTT,

Chemist-in-Charge, State Co-operative Food and Drug Control, Federal Bureau of Chemistry.

MR. J. S. ABBOTT: Mr. President, Ladies and Gentlemen: I am sure you will observe this morning that there has been a deep-laid conspiracy here to "pass the buck" to me on this problem, but I take it graciously and will do the best I can with it, which you know of course will be the best that could be done with it. They pass so many of these things to me that it reminds me of the fact that I am very much like a Virginia fish pond. I for years have been covering the whole world and I am not deep anywhere. But you know that doesn't make any difference, they keep on passing this

thing to me and that thing to me; it doesn't make any difference whether I know anything about it or not, they know it is going to be taken care of. I may say to all of you, keep this good work up, the more you do the happier it will make me. I will do anything that is imposed upon me from taking care of the babies (if you happen to have any around here) to making an explanation of the most abstruse problem of chemistry.

With reference to this report of the Committee on Co-operation, last year I read a very lengthy report, and the reason it was lengthy was that it was the report of the Committee on Co-operation—supposed to be—when as a matter of fact there wasn't any such animal at that time. The whole committee had gone out of office or died—something unfortunately had happened to them, and there wasn't anybody to look after the thing but me, and nobody to keep me from talking. That means there was a long report. This year I didn't have any such liberty. There was a long Committee on Co-operation, and we got together, talked things over and wrote up a little report, and inasmuch as we had these five committeemen there to hold the thing down, we got a short report. I trust that you will listen to it, because it won't be long. I don't mind talking to my tribe even if it is in the presence of company. I can talk plainly to my tribe because my tribe understands me, and I understand my tribe, and we are going to get along together, but I want you to listen to the report and when it is read I want you to discuss it and do something with it. It doesn't make much difference what you do. It is the committee's report, it isn't mine, and I want you to discuss it and do something with it, but for goodness' sake, don't do with it what you have been in the habit of doing with it—say, "Well, it is late, it is time to go to lunch, we will discuss it some other time." I heard that two years ago after I read this report, and I don't doubt but what it was very much to your edification that you didn't have to discuss it or hear it discussed, but this year you are not going to get away from it. Last year you know I was the whole show, because the committee was dead, and after I read the report a funny thing happened. Somebody got up and made a motion that the report of the committee be referred to another committee which the chairman named, for discussion, and report on the committee's report on co-operation. That was a little unusual, but that is one way to dispose of a thing. But you are not going to get away from it this year. Of course, what we recommend and talk about here is generally all understood anyway, and I suppose that is the reason things are handled like they are.

Your Committee on Co-operation is pleased to submit for your serious consideration the following report:

The activity and progress of city, state and federal food and drug control officials toward co-operation in the enforcement of food and drug laws have been reported to you regularly through the medium of the Clearing House Letter of the Bureau of Chemistry with which you are familiar. It is not deemed necessary, therefore, for your committee to repeat to you in this report what has already been made public.

The Clearing House Letter, issued by the office of Co-operation of the Bureau of Chemistry of the U. S. Department of Agriculture, was established January 1, 1917, as the medium for the transmission of authoritative official information relating to the enforcement of food and drug laws throughout the United States. During March of 1918 this letter was combined with the Monthly Summary of Regulatory Work of the Bureau of Chemistry under the title The Monthly Review of the Bureau of Chemistry. This review is now not only a monthly abstract of the regulatory work of the Bureau of Chemistry but is intended to be a comprehensive monthly review of all of the activities of the Bureau of Chemistry and of the city and state Food and Drug Control Departments in the United States of America. It is not issued for the information of the public. It is sent only to city, state and federal food and drug control officials for their official information and guidance. It

is, therefore, respectfully recommended that city and state officials furnish the Bureau of Chemistry for distribution among city, state and federal officials, through the medium of the Monthly Review or otherwise, the following information:

1. Their program of work.
2. Monthly reports of their important activities of general interest to other officials.
3. Notices of changes in their organizations and personnel of their organizations.
4. New rulings or food and drug inspection decisions.
5. New legislation.
6. Compilations of their definitions and standards, both statutory and administrative, and their rulings or food inspection decisions.
7. Notices of seizures which they cause to be made for violations of the Federal Food and Drugs Act.

It is also recommended:

8. That at least one day of each annual convention of this Association be set apart for an executive session of the Association for the purpose of discussing purely administrative problems.
9. That a standing committee be appointed to report at each annual convention on the court decisions handed down during the year in a way that will guide the officials in the administration of food and drug laws.
10. Committee on Legislation, also
11. That state officials endeavor to establish a plan of co-operation between the State Food and Drug Department and the Food and Drug Bureaus of the Health Departments of the cities of their respective states.
12. That city, state and federal food and drug officials of this Association unite in the formation of smaller associations on a basis of common interests to study ways and means of handling local problems, and that these conferences be entirely of an executive nature.
13. That food and drug officials collaborate with each other on investigational problems relating to the enforcement of food and drug laws and the data obtained through such collaboration be distributed among such officials.
14. That a part of the last day's session of each annual convention be set aside to arrange the program for the next ensuing convention. Further, that the members of this Association, whose names may appear on the program, be and they are requested to submit copies of their remarks or papers to the Executive Committee at least thirty days in advance of the date fixed for the annual meeting.

DISCUSSION OF THE ABOVE RECOMMENDATIONS.

Food and drug officials want to know what other officials are planning to do, what they have done, the nature of their organizations, and the personnel of the same, their food and drug inspection decisions, the nature of the laws which they administer, the definitions and standards, both statutory and administrative, under which they are operating. Such information as this should be available to every official in America, otherwise there is no basis for uniformity or unity of action in the administration of food and drug laws. The office of Co-operation of the Bureau of Chemistry was created for the purpose of securing and distributing such information as this. Repeated requests, both by circulars and by personal letters, have failed to bring together this sort of information in anything like a comprehensive and up-to-date form. Such information as relates to the Bureau of Chemistry and its decisions is furnished to city and state officials through the medium of the Monthly Review of the Bureau of Chemistry and through personal correspondence with city and state officials. The Office of Co-operation is compiling and distributing from time to time regulations, definitions and standards relating to the enforcement of the laws of foreign countries.

Inquiries frequently come to the Bureau of Chemistry from the trade concerning seizures under the Federal Food and Drugs Act that were made on the evidence of state or city officials concerning which the bureau has no informa-

tion. A compliance with Recommendation No. 7 would, therefore, greatly assist the Bureau.

It is the opinion of this Committee that there has not in the past been close enough co-operation between city, state and federal officials in securing information of basic importance in the enforcement of food and drug laws. For example, one organization undertakes to secure, through appropriate investigational work, information of what is a proper fill of canned goods, or of what is the composition of unwatered tomatoes, or of what the trade practice is of a particular class of manufacturers. Recommendation 13 is therefore made.

Respectfully,

COMMITTEE ON CO-OPERATION.

These different classifications that I have discussed here, in reference to the Bureau of Chemistry, are for the purpose of abstracting and editing in this Monthly Review of the Bureau of Chemistry for the official information and guidance of city, state and federal food and drug officials, the work as outlined. This Monthly Review is intended to give officials complete information as to what other officials are doing. We want to make this review worth while. We want to make it comprehensive. This Review at the present time is giving you up to date information of the work of the Bureau of Chemistry. We include in there a digest by states, for your convenience, of complaints that have been filed on the food and drugs act. We give you a similar abstract of cases that have been terminated under the Federal Food and Drugs Act, and that information comes out a week or two or three weeks after we get the information ourselves. So you are not dependent upon any written publication that may be issued in the department a year or two hence, after this information is obtained by us, as to what our activities have been in your territory. We give you the important food inspection decisions of our Bureau, we give in there the work of the Standards Committees, we give the programs, the work of the field forces of the Department of Chemistry, right up to the minute. We give you every possible information we can and get it to you as soon as we can get it printed. I do not know that there is any other branch of the government anywhere that is furnishing a city and state agent with information on what the activities of a particular branch of the government are, with the thoroughness and promptness that we are. I do not make any apology for that because you know this cannot be accomplished by any one individual. It is possible because of the activities of everybody concerned in the food and drug control work, connected with our Bureau. My office is only one of the little cogs in the great machinery that enables this to be brought about.

Gentlemen, if you will give us the same sort of information about your activities that we are giving to you and if we can abstract it and get it to you, this Monthly Review will be a medium for the transmission of information that is not covered by any publication in the world. That has been going on for a long time and we want to see that it continues to go. You who know the spirit of the head of our Bureau know that he has a judicial temperament; he gives everybody what is coming to him, and I know that it is his desire that some time this publication, which is now gotten out in multigraph form because of the practical troubles in printing it, this Monthly Review may in time get to be a regular printed monthly review of the activities of food and drug control officials, not only throughout the United States, but throughout Canada, Cuba, Mexico, England, France, Italy, and in other allied countries. I am not particularly interested in whether Germany gets it or not (applause), but there is no publication that covers the ground that this particular publication wants to cover, and in peace times, when things get settled down, we may be able to make this a printed monthly bulletin of such a nature that it will be given general publicity and will help the cause that we are in. It will help this food and drug control movement, which as you know is one of the great world movements and is here to stay. How long it will be before that sort of mil-

lennium comes to pass we do not know, but it will come to pass because of the constructive principle that has been followed by the head of our Bureau and you, gentlemen, not making this food and drug control movement simply a little police job but a real big constructive movement for better food throughout the world.

We earnestly hope that you will consider giving us this information, and that your heads of the departments will give a little monthly review of your important activities and not leave it to me to dig it up as best I can. That is one of the things we are tremendously interested in. We feel that this is the only thing that can make a basis for uniformity of procedure and action among the food and drug control officials of this world. If we have any united effort in this world movement we must have a means of knowing what other agencies are doing, like our own.

I would like to again call your attention to recommendation eight. The administrative officials in this work need to get together and discuss administrative problems among themselves. They would not be interesting to outsiders or even to the trade in many cases, but they are problems that affect us in our work. We have got to get together and discuss these matters, because no matter how constructively we may face this great movement, we must realize that it is a punitive proposition.

Our constitution has indicated that the purpose of this organization as it was founded was to promote uniformity in legislation, to promote wholesome legislation for the protection of the public health, and for the prevention of deception in trade in food and drug products. That is the business of this Association. Then if that be the business of this Association, the logical thing for us to do when we do get together is to discuss legislation, as recommended in Paragraph 9, and court decisions that have been handed down under our present laws, in order that we may proceed to accomplish the purpose for which the organization was created.

The office of Co-operation in the Bureau of Chemistry was thought out and recommended by you, and established by them on your recommendation. The co-operation of state officials and Washington has been proceeding for four years, and we have one of the closest organizations in a co-operative way that there is in any government agency, and perhaps the very best that there is in the government agencies today. We know each other. We know how to act and talk to each other. We have become acquainted and we can organize for the accomplishment of any great purpose by telegraph. We can get together in 24 hours and have united effort in the enforcement of the food and drug laws in America. That has been done time and time again most successfully and effectively, as you know. In reference to the work we have done this summer on eggs and bread, in co-operation with the United States Food Administration, we have amazed the people by the rapidity with which we get together, organize and get results and information. There isn't another branch of government, in my judgment, that can do any line of work so thoroughly and efficiently as the city, state and federal officials on the problem of food and drug control. I feel that it is the best means of developing co-operation with city people. As government has taken hold of co-operative work, the state will take it up in some way, and then the city.

Mr. Taylor recently sent out a letter asking how many had laboratories for any sort of food control. He got replies from fifty per cent or two hundred and fifty. He found that there are in America 176 cities that have real good laboratories for the investigation of milk, a chemical and bacteriological laboratory. We have only made a beginning in reference to that work. We have a little co-operative work here and there. Mr. Purcell of Virginia has established a system of co-operation with the city people. Mr. Woodworth has done the same thing, also Dr. Blanck of Maryland. Texas did the same thing, Mr. Foust has had some fine co-operative work in his city, and many, many others have approached this problem. I think the time has come

when we should work at it intensively as well as extensively. Some people do not want to do it, make one excuse or another. They say, "I can't get along with this city man. We never expect to have a heaven here in this country, and we hope the Germans will not bring the other country any closer to us than it is; in fact, we hope we will get it a little farther away, as we are doing."

Referring to Paragraph 12 of the recommendations, I mean such associations as the Central Atlantic States Association, the Southeastern States Association, the South Central States Association, and the Western States Association. There are two chief reasons for that recommendation. One is that there are groups of states in this country that have very similar problems. The other reason is that it gives an opportunity to more men to meet in conventions like this and discuss problems of food and drug control. It gives the inspector a chance occasionally to get out and meet men in the same kind of work he is engaged in. It enables the chemist to get in touch with his fellows who are working along similar lines with him. They are already getting together in that way and doing some good work, and they are going to do more, so we feel that sort of thing should be encouraged in every state in this country, that these people may have a chance to get together.

The President of the United States has said that the only man that is unhappy is the man who is lonesome. The man away out in the brush who never gets in touch with his fellows gets awful darned lonesome sometimes. He ought to have a chance to get together with us and discuss these problems. Bring the meeting place close to him. It is one of the greatest pleasures in my life to get out and meet those people and hear them talk.

"That food and drug officials collaborate with each other on investigational problems relating to the enforcement of food and drug laws and the data obtained through such collaborations be distributed among such officials."

Suppose some man starts in this year to get authoritative information as to what is a proper pack of canned corn or peas; he says, "I would like to know that, because sometimes cans are only three-fourths full or two-thirds full." He starts out to get information on that. Nobody has the information. He gets the information in his district. He doesn't publish it in a scientific paper and it never gets outside of the state. Some other state man does the same thing. Nobody knows what results were obtained by anybody else, and that means we have no organization. Or suppose a man starts out to find out what is the proper composition of a can of tomatoes. He gets the information and doesn't give it to anybody else. The President has said that the only thing that keeps people from co-operating with each other is pure, unadulterated selfishness. We have got to collaborate more on obtaining information of this kind for our analytical work.

Referring to Section 14 of the recommendations, I was appointed a few minutes ago to take care of this press notice proposition. If I had had copies of your papers thirty days ago, I could have taken them home and studied and thought over them and prepared a little press notice, given it to the press committee for their approval, and had copies made for the papers throughout America. It would have been a straightforward, plain business method of handling our business. If we have anything we want to give publicity to, we want to do it in the right way. If we have any propaganda we want to give to the country, let us not depend on the people of the press, who are good enough to come here and try to get it as it is delivered. I offer this as a recommendation for your consideration. Don't wait till the last minute to prepare your program.

Another recommendation, "That the constitution of the Association be amended making every dairy, food, and drug control official in the United States and Canada eligible to membership in the Association." The name of our Association is the American Dairy, Food and Drug Officials Association; that is a mis-brand. You will see from our constitution that it is not an association of dairy, food and drug

control officials at all. That matter probably will be brought to your attention in the report of the committee on constitution, therefore I won't discuss it any further, but I would like to see a real, live association of food and drug control officials, one that will give business experience and thought to its activities, and I would like for each man in this food and drug control movement to feel that he is by virtue of his vocation or avocation or calling or profession eligible to membership in the highest national organization that exists for the consideration of policies and problems to which he is devoting his life work.

Referring to Paragraph 16 of the recommendations, we ought to be a great big parent association, the local associations ought to be our husky, stalwart children. There ought to be some such sort of relationship existing between these associations, if we expect and intend that these associations ought to be worth while and develop uniformity of thought, experience, and laws throughout America for the control of food and drugs (applause).

PRESIDENT FOUST: I desire to state that discussion of this report will go over for the present. We will take up these recommendations as well as the report of the Committee on Co-operation, at a later hour, in order that we may at this time hear Dr. W. A. Evans, former Health Commissioner of Chicago, also Professor of Sanitary Science at Northwestern University. Dr. Evans (applause).

DR. W. A. EVANS: I wish to apologize for breaking in on the man of affairs. I think I can understand the importance of the subject that he has just been presenting to you, and your desire that it may not be finally considered or acted upon at a time when you are getting ready for lunch and your thoughts are on your appetites rather than on the matter in hand. I have prepared a paper here on the history of milk inspection.

HISTORY OF MILK INSPECTION IN CHICAGO AND FUTURE OF MUNICIPAL MILK INSPECTION.

BY DR. W. A. EVANS,

Professor of Sanitary Science, Northwestern University Medical School.

Chicago was incorporated as a city in 1837. Among the charter rights given the young city by the Illinois General Assembly by a law passed March 4, 1837, were:

"Section 9—To require owners of groceries, tanneries and barns to cleanse them and to abate nuisances in them as often as necessary for health, comfort and convenience.

"Section 10—To direct the location of slaughter houses and markets.

Section 18—To remove or destroy unsound or putrid meat.

"Section 47—To establish markets and regulate the sale of meats and vegetables, fruit and eggs, and to license butchers."

The new city organized with a board of health that was really little more than a committee of the council with the mayor as chairman, the secretary of the council as secretary, and a city physician.

The council proceedings of those early years contain many complaints and orders about cows running in the streets, slaughter houses and offal, but these related to comfort and decency more than to health or honesty. It does not appear that the city council legislated on any of the questions relating to food supply—powers given them by the legislature—for many years.

Gradually the functions of the health department split off from the general governmental functions of the mayor and the police department. Then the department itself began to split up into bureaus. The first split was a division more or less complete into medical inspection service presided over by the city physician and a sanitary bureau presided over by a health officer who was sometimes closely attached to the

department, sometimes a policeman detailed to the department, and sometimes the city marshal. The date of some of the services having to do with food are as follows:

In 1851 a slaughter house inspector was appointed. Perhaps this may be held to be the beginning of the meat inspection bureau. After 1852 we find no appropriation for the slaughter house inspector.

In 1862 the German Butchers' Association petitioned the city council to provide for the appointment of a meat inspector.

In 1863 an ordinance regulating the sale of fish was passed. This ordinance provided for a fish inspector. In the same year an ordinance providing for the inspection of flour and a flour inspector was passed.

In the city ordinances of 1867 the only reference to milk is in section 28, which provided a penalty of \$25 to \$100 for selling impure, unwholesome, adulterated or diluted milk. Milk does not seem to have attracted further attention from the city council until 1875. An ordinance introduced in that year did not pass until July 12, 1877. It provided for licensing milk dealers. The license fee was \$5.00 a year. It was made illegal to sell skim or unwholesome milk. The mayor could appoint a milk inspector or the commissioner of health could appoint a sanitary policeman as milk inspector. In 1877 the first milk inspector was appointed, but he seems to have been better qualified politically than technically, for in 1878 there was no report from the milk inspector, but the 1877 inspector, Lewis Merki, was carried as a clerk and a few years later became a smoke inspector.

The report of the health department for 1877 contains a report by Lewis Merki, milk inspector. In that year 993,224 eight-gallon cans of milk were shipped by railroad into the city and 1,361 cows kept within the city produced 745,148 gallons of milk. Milk was sold for 5 cents a quart. There were 430 licensed milk dealers. The commissioner said: "More than sixteen hundred thousand dollars are paid per annum by our citizens for milk, and in the opinion of two competent chemists who have devoted four months to the examination of many specimens to 10 per cent of this milk is added water. Cream is also largely removed."

In 1879 a state law was passed making it a criminal offense punishable by a fine of not less than \$25 or more than \$100 or confinement in jail for six months, or both fine and imprisonment, to sell milk for human food from which any cream had been taken, without informing the purchaser, or milk from which strippings had been withheld, or milk drawn from a diseased cow, or unwholesome milk, or milk to which water had been added, or to which any preservative had been added. The same provisions and penalties applied to the sections of the law relating to milk going to butter factories, cheese factories and creameries. Any milk obtained from cows fed on distillery waste or upon any substance in a state of putrefaction was declared to be impure and unwholesome.

Nov. 10, 1879, the following resolution was passed by the Chicago city council: "Whereas large numbers of milch cows are fed on distillers' slops at the cattle barns of the various distilleries throughout the city; and, whereas, the milk taken from the said cows is allowed to be sold in the city as pure and wholesome, notwithstanding the fact that the best medical authorities in the city have declared time and again that the use of such milk was positively dangerous to the health of the people and particularly to the health of the children, and, whereas the council ought to do everything in its power to guard and protect the health of our citizens at this particular time, in view of the fact that sickness and epidemics are so prevalent in many of our large cities; therefore, be it resolved, that the commissioner of health be and hereby is directed to stop the sale of milk which is taken from cows now fed at the various distilleries of the city." The resolution provided a penalty of not less than \$10 nor more than \$50 and stipulated that a milk license that had been revoked could not be reissued for one year. Skim milk was allowed sold when plainly labelled as such.

The appropriation ordinance for 1878 provided \$1,000 for milk examinations chemist.

The ordinances of this period gave no standards and carried almost no machinery for enforcement. However, the penalties were fierce.

In 1880 the department chemist, a new appointee not specifically provided for in the appropriations or ordinances, reported that he had examined 101 samples of milk for fats, total solids and ash. The fat standard demanded by the chemist was $2\frac{1}{2}$ per cent.

There is no report on milk in 1881.

In 1881 an ordinance was passed authorizing the appointment of a butter and cheese inspector, but he was to serve without salary. The arrangement did not work very well for, in October, 1885, we find the council calling on the mayor and commissioner of health to strictly enforce the butter and cheese ordinance.

By 1886 there were seven stockyards and meat inspectors and such milk inspection as was done was done perhaps by one of these.

In the report for 1885 Prof. J. M. Long reports to the commissioner as follows: "A good deal of the milk sold in Chicago last fall was of a very suspicious character. I trust these investigations may suggest the necessity of a state law fixing the standard of purity for market milk."

In 1887 Dr. Long reported that 37 of the 50 samples examined contained less than 3 per cent fat. He said: "This is not a good showing; it suggests a slight skimming. Chicago milk should meet a standard of 3.5 per cent butter fat and 12.5 per cent solids."

In 1888 Prof. Long said in his report: "I think the time has come when the quality of the milk which may be sold as pure in this city should be defined by special ordinance. I believe we are now in a position to discourage the coloring as well as the skimming and watering of milk." Evidently, the quality of the milk and especially dishonest practices therein were beginning to displace swill feeding in the popular mind.

Jan. 1, 1890, Dr. Frank Cary, carried on the pay roll as a medical inspector, made a report which he signed as department chemist in which he says: "The work done in this department during the past year has been of much the same character as that of preceding years. We regret that the law does not permit us to go further and investigate the outside sources of our milk supply." The suggestion of dairy farm inspection was not adopted for nearly a decade. The major part of Dr. Cary's work consisted in milk analysis. He refers to work done with Quevennes lactodensometer and Feser's lactoscope. He refers to work done by Klein of London proving that scarlet fever may be caused by certain diseased conditions in cows and also to the certainty that tuberculosis may be contracted from drinking milk from tuberculous cows. "We must not, therefore, look to a chemical analysis of milk for the detection of poisons of this character derived as they are from bacteria."

The first demand for milk inspection was based on the general opinion that milk from cows fed on distillery slops was unwholesome. The council proceedings of that period teem with communications relative to feeding with distillery slops. The next impulse which we find cropping out relates to cheating in trade through watering and skimming. In Dr. Cary's communication we find the first warning of harm from bacteria transported by milk.

But these warnings were disregarded, for on Dec. 31, 1891, the assistant commissioner of health said: "This city has never provided for a milk inspector. Other municipalities say they are expensive. Courts hold that a chemical analysis is necessary to secure a conviction in a case of a party prosecuted for selling adulterated milk. Therefore, I would suggest that a competent chemist be added to the working force of the department of health. During the year many samples were brought to the department for analysis. The department was under the necessity of acknowledging that they were not prepared to make analysis." But in the same report the chief medical inspector reports "much effort has been made to prevent the distribution of milk from premises where

there was scarlet fever and diphtheria by closing the dairies for 30 days."

No laboratory work and no milk inspection was done in 1891 or 1892. In 1893, Dr. E. Garrott, chief medical inspector, prophesied that "the ordinance making milk inspection a separate bureau will prove of untold benefit to the general public."

The city laboratories were begun in 1893 under the 1892 ordinance. The ordinance provided for a city laboratory and milk inspection service in connection therewith. The first force consisted of a director and chemist, a microscopist, a clerk and four milk inspectors. We may say, then, that the milk bureau had its definite beginning in the ordinance of October 21, 1892. This ordinance established standards for milk and cream.

In 1893 the health commissioner said that in the earlier part of the year 75 per cent of the samples examined were below the legal standard. Forty-six per cent of the entire year's samples were below grade. Thus the bureau had saved the citizens from being cheated out of thousands of dollars worth of milk fats.

In February, 1894, the laboratory and milk inspection service was moved into the city hall. In that year there was a beginning of farm dairy inspection. One hundred and eighty-eight dairies were visited and brought under control.

In 1896 the meat inspection service was transferred to this bureau. Other work such as ice inspection, water analysis, diagnosis work and general food work speedily developed in this bureau.

We read that preservatives were just detected in Chicago market milk in the latter part of the spring of 1900. In 1900 formaldehyde was found in 292 specimens of milk. In 1901 in 174; 1902, 70; 1903, 34; 1904, 25. Soon after the practice of using preservatives in milk was practically discontinued.

By 1904 the department was maintaining four dairy inspectors and had been since 1900. The greatest stimulus for dairy inspection was the desire to stop the feeding of brewery slops.

In 1909 all food work was gathered into a bureau separate from the laboratories and known thereafter as the food bureau. The practice of feeding brewery slops having been fairly well controlled by 1906, the dairy inspectors began to inspect for bad sanitary conditions.

In 1907 the state legislature passed a law aimed at dairy farm inspection. It provided that in determining the quality of the milk nothing should be taken into consideration except the milk in the can.

The law passed by Chicago in July, 1908, I quote in full since it served as a turning point in procedures of milk: "No milk, cream, buttermilk or ice cream shall be sold, offered for sale, exposed for sale or kept with the intention of selling within the city of Chicago, unless such milk or cream or the milk or cream contained in buttermilk or ice cream be obtained from cows that have given a satisfactory negative tuberculin test within one year; the cows having been satisfactorily tested shall be marked tuberculin tested and shall be numbered and a certificate shall be filed with the bureau of food inspection of the department of health of the city of Chicago upon forms furnished by the commissioner of health giving the number, a brief description of the animal, the date of taking of said test and the name of the owner. Said certificate shall be signed by the person making such test, provided, however, that from Jan. 1, 1909, for a period of five years, to-wit, until Jan. 1, 1914, milk or cream or buttermilk and ice cream made from milk or cream obtained from cows not tuberculin tested or not free from tuberculosis may be sold within the city of Chicago if the milk or cream from said cows is pasteurized according to the rules and regulations of the department of health of the city of Chicago."

Other sections covered butter and cheese in the same way. The ordinance required that the package should be labeled "made from milk from cows free from tuberculosis" or "made from milk pasteurized according to rules," etc., as the case may be.

The novelty of these ordinances was these features:

- 1—They included milk products as well as milk or cream.
- 2—They required tuberculin testing or
- 3—They required pasteurization.

Since that date a great many cities and some states have amended their milk laws so as to require tuberculin testing or pasteurization or both, following in a general way the lines laid down by the Chicago ordinance of 1908.

May I interrupt long enough to say that the pasteurization features of that ordinance have never been interfered with by state legislature or by the courts. In consequence, milk borne contagion has been reduced to a minimum. The tuberculin testing features were shortly upset. In consequence, the dairy cow tuberculosis problem which should have been solved by now continues to grow as a source of economic loss to the producers.

In 1911 the state legislature passed the following law aimed at the Chicago ordinance of 1908: "It shall be unlawful for any city, village, incorporated town, county or other corporate authority in the state of Illinois by ordinance, rule or regulation other than may be established by the law of this state to demand, fix, establish or require the tuberculin test to be applied to dairy animals as a means or measure of regulating and purifying milk, skimmed milk, cream and dairy products of said animals in any manner whatever and every such ordinance, rule, by law or regulation passed, demanded, fixed, established or required by any such city, village, incorporated town, county or corporate authority other than the state of Illinois, is hereby declared to be void and of no effect."

The Chicago health department, instead of attacking the constitutionality of this law passed an ordinance intended to get around it. This ordinance required the pasteurization of all milk except certified and inspected milk. The present commissioner of health, finding no milk conforming to the requirements laid down in the ordinance for inspected milk, is requiring that all milk coming into the city except certified milk, shall be pasteurized. Certified milk, here as elsewhere, is of such small quantity that it is not held to be worthy of any special consideration. This action by the present commissioner of health was taken in 1916. Practically all of Chicago's milk is now pasteurized. Dr. Robertson's action was right since Dr. Young, when commissioner, admitted at Drexel Pavilion, October, 1912, that the part of the ordinance relating to inspected milk was not being enforced and that it has never been intended that it should be. Inspected milk was not up to standards during 1912, 1913, 1914, 1915 and 1916.

It was promised for the Chicago pasteurization ordinance that it would greatly lessen the infant mortality rate, the typhoid rate, the streptococci sore throat rate, the scarlet fever and the diphtheria rate. It has accomplished what was promised except as to diphtheria.

In 1907 the state passed a law setting the milk fat standards of milk at 3 per cent and cream at 18 per cent.

So much for the history of milk inspection in Chicago. Insofar as its general trend is concerned this history does not differ materially from that of milk inspection elsewhere. There was first the agitation against the stabling of cows in town, which, in the main, was aimed at the great stables in which swill feeding was done. This fight was based upon the theory that milk from swill-fed cows was unwholesome. There was very little scientific basis for the contention.

The next step was the establishment by interrupted stages of laboratories for the chemical examination of milk. This step was aimed at the prevention of unfairness in trade, though a good many of the claims were based on health considerations. The examination for and the control of the use of preservatives was a by-product of this stage. The establishment of legal standards was a necessity during this stage of development.

The gradual establishment of dairy farm inspection in Chicago grew out of the effort to prevent feeding of brewery by-products to milch cows.

The last step was the effort to prevent the spread of milk borne contagion by milk.

We naturally ask why has milk been picked out as the special object of municipal inspection. It is because when milk is harmful it is such a source of harm, because cheating in the sale of milk is such an easy matter, and, because the product spoils so rapidly.

The first of these points applies also to water with which commodity the community early in its career went beyond inspection and into municipal ownership. Should any city go into the milk business and make a success of it, even remotely approaching the success of municipal water plant ownership, the sheep would rapidly jump the fence and municipal milk plants in twenty years would be as common as municipal water plants now are.

But there are limitations to municipal inspection of milk, even though municipal inspection, up to now, is far more effective than state inspection. The dairy farm inspectors have no direct legal authority. Farm inspection is costly and unsatisfactory. Milk shut out of one town is diverted to another, etc.

When milk has been made a sterile, safe and at the same time, relatively nonperishable product, inspection will slowly pass from municipal to state and probably to federal hands. When pasteurization was established, the first step in this direction was taken. In my opinion we are on the verge of taking the next step. It may be condensed milk, dried milk or frozen milk, electrically sterilized milk or Buddeized milk or it may be a combination of these.

When the step is taken the present machinery for milk distribution—milk wagons, milk trains, milk depots, will cease to function. Milk will become an ordinary grocery store proposition. When it does, municipal milk inspection will go back on the same plane, having the same values, and machinery with bread, butter, fish and meat inspection, and no more. The present great machinery for municipal milk inspection will end, or, more accurately, will shrink. Milk, being on the same basis as butter, will be marketed at long distances from the point of production, and at dates remote from the date of production. Like butter and cheese it will have federal inspection.

The question of tuberculosis in dairy stock having ceased to be a menace of the first magnitude will be handled by the government as an economic problem.

PRESIDENT FOUST: I know that everyone here enjoyed this splendid paper from Dr. Evans. It was very kind of him to come here at this time and give us this information. Is there anyone here that desires to ask Dr. Evans any questions? I know he will be glad to answer them. (No questions were asked.) It is now 12:30, and I would like to suggest something that is up to the Association whether they will accept it or not. Before offering my suggestion I want to ask Dr. Alsberg if he is ready to report on amendments?

DR. CARL L. ALSBERG: Not ready yet.

PRESIDENT FOUST: I am going to suggest that Mr. Abbott's report, which is the report of the committee on co-operation, and Dr. Blanck's and Dr. Alsberg's reports, be taken up at an afternoon meeting, when they can be fully discussed and considered and disposed of, in order that we may be ready tomorrow to take the trip out to the Great Lakes. I suggest that we take a recess until 3 o'clock.

(It was moved, seconded and carried that the President's suggestion be adopted.)

(The meeting adjourned.)

SECOND SESSION.

Tuesday, August 28, 3:00 P. M.

PRESIDENT FOUST: The meeting will come to order. We will now take up the report of the committee on co-operation, which you heard this morning, first by Chairman Purcell, and second the written report that was read by Mr.

Abbott. The discussion of that paper is open, as well as the consideration of the recommendations by the committee. Mr. Abbott, do you desire at this time to open the discussion, or do you want to hear from somebody else first?

MR. J. S. ABBOTT: Mr. President, I discussed this as I went along this morning, and I will not take the time to re-discuss it. There is just one point; I didn't give the recommendation that there be at least one session allotted in each convention for an executive session. This year the program committee was good enough to set two days as executive sessions for discussing problems of the officials, and we appreciate very much the fact that the executive committee settled that part of the problem themselves. Of course, they can continue to do so without any further action.

PRESIDENT FOUST: We will hear from W. C. Dumas, State Chemist, Georgia.

MR. W. C. DUMAS: Mr. President, I don't know that I can add much to the report Mr. Abbott read, but the subject of co-operation is a very broad one, a very important subject, and I have a few remarks I have written down here which I would like to read.

CO-OPERATION.

DISCUSSION BY W. C. DUMAS,
State Chemist, Georgia.

GENERAL.

The word "co-operation" means "working with." To make any mutual work along any particular line effective, there are two factors which are absolutely indispensable. They are enthusiasm and continuity.

The trouble with most co-operative systems is that the efforts put forth by the different factors composing them are spasmodic, ill-directed, and diminishing in intensity.

Fires of enthusiasm die if not fed. Such fires must be kept alive. I have heard it said that the work of a food and drug control official is a business, and is nothing more than any other cold business proposition. I do not think so. I think that in this work enthusiasm for it and interest in it and others who are also engaged in it are more essential to its success than anything else.

I have also heard it said that such control officials are merely state and inter-state policemen. Imagine a policeman with enthusiasm. Even if we do put it upon this basis, it is certain that our work would have more effectiveness if we brought to bear upon it as much enthusiasm and interest as we could possibly muster. If this were so such papers and discussions on co-operation would not be necessary.

Back of an effective co-operation, there must be system. Enthusiasm is the force that operates the system. It furnishes the driving power.

My auditors come from all states of the Union, from every section of the country. We are all interested in foods and drugs from one or more of many standpoints. Our interest may be in production, manufacture, distribution or control, or perhaps all four. It is certain that our work is along similar lines. What a fine opportunity for co-operation. We meet, transact business, listen to papers and discussions, but I tell you, gentlemen, we will miss our first lesson in co-operation if we do not follow up the opportunity here presented of becoming better personally acquainted with each other. The factor of personal acquaintance is a potent aid in co-operation along any line of endeavor. When one approaches a stranger with a discussion of a problem of interest to both, he does not accomplish the same result that he does when he talks over the same problem with a friend.

I know that it is not possible for each man engaged in this work to know personally all the others, but there is no discounting the value of personal acquaintances in this work in which we are engaged. As an example of what I have said concerning the effectiveness of personal friendships in co-operative work, I wish to mention the conditions as we

have them in North Carolina, South Carolina, Georgia, and Florida. Most of the food and drug control officials of these states are acquainted with each other and with the people of the Federal Bureau at Savannah. As a consequence we have frequent joint meetings which are delightfully informal and there discuss the problems which are engaging our attention. We get more out of these meetings than we would out of a year of correspondence. This result is obtained not only because things can be done more quickly in this manner, but because of our acquaintance with and interest in each other.

CO-OPERATION BETWEEN STATES.

Each state has it within its power to deal effectively with inter-state shipments of illegal commodities by co-operating with the Bureau of Chemistry. But there are a great many potential violations that could be prevented from development by an active co-operation between the state authorities in the states concerned.

Manufacturers of commodities in every state ship their products into almost every other state. Among state control officials, there should be an inter-state rogues' gallery for violators. "Bertillon" records of their practices, reliability and resources, as well as analytical and scientific records of their products should be kept. And the states should co-operate in letting other states and the federal people have these records for their own files in case any occasion for their use arises. Of course, the federal people and the particular state concerned can attend to a particular violation, but this information would aid greatly in working up other inter-state cases as well as in protecting the people of some one state against fraudulent practices.

As an instance of the value of co-operation, I recall a matter which concerns the branding of feeding-stuffs. In Georgia, we have a ruling defining velvet bean products. Recently a miller of these products in my state shipped into North Carolina a lot of velvet beans, ground with the shell, which he offered for sale there as velvet bean meal. Mr. J. W. Pickle, feed chemist of the North Carolina Department, sent me a copy of a letter which he had written to the Georgia miller telling him that such a feed must be branded as velvet bean feed. This letter enabled us to get the information concerning this miller's practices, as to branding, which was a violation of our own ruling.

Conditions in most states are such that an active co-operation in court cases is not always possible between the state officials. But such a co-operation should be possible. Let me illustrate. Suppose our inspectors found offered for sale on the Georgia market by some dealer immature citrus fruit, and suppose we proceeded against the violator in the courts. Our law enables us to do this, but if we found it advisable to have some of the Florida officials as experts, would it not be a good thing for conditions to be made so that this could be done? Certainly it is as much to Florida's interest to suppress the shipment out of Florida of immature citrus fruits as it is to ours to punish the man who actually distributes it.

Numerous instances along the same line could be cited.

CO-OPERATION OF CONTROL OFFICIALS WITH PRODUCERS.

Some few food and drug control officials are inclined to take a chronic antagonistic attitude towards the manufacturer and producer of foods, just because he is a producer and might break a law or go counter to a regulation.

This is wrong. There should be co-operation between us and them—a more complete co-operation than there now is. If there was this co-operation of which I speak, many of our misunderstandings, and along with them many of our troubles, would disappear. There would then be left only the man who would wilfully violate our laws and regulations. As a general thing, we do not have enough patience and tolerance with food producers, manufacturers, and distributors. We do not always give enough specific information to the honest man who comes to us asking to be shown how he can comply fully with the food regulations in marketing his products.

There is such a mass of regulations, laws, rulings, and information that it is bewildering to one just beginning in any food or drug enterprise. No wonder he violates some of them. When such a man comes and asks how he can stay within the law in marketing his products, I believe he should be helped, even if our functions are supposed to be regulatory.

It is true that food control officials are not supposed to be running a kindergarten. A policeman, theoretically, is not expected to show one how to obey the law but to see that he does it. But, into whatever class we put ourselves, it is certain that we will make more headway and get better results as control officials if we do co-operate with the producers, distributors, manufacturers, and public, whenever possible.

We, I, all of us issue rulings, regulations, and information which is supposed to be self-explanatory, but which sometimes is very bewildering to the man who is trying to live within the law. It is much better to tell him where he is wrong when he asks us and thus help him in the beginning, than it is for him to go along violating the law and put upon us the expense and trouble of catching him. It is more effective, too.

Where there is a genuine co-operation between a high-class manufacturer and the food control official, it is possible for him through his agents to aid the control official to bring to light other violators who perhaps are competitors but who are dishonest ones.

CO-OPERATION WITHIN SCIENTIFIC ASSOCIATIONS.

Quite often there is not the fine spirit of co-operation between scientific and technical men within our scientific associations themselves that there should be. What I am going to say is not intended to be idle criticism of this Association for the mere purpose of criticism. It is what I, one of the newest members, learned from the meeting at Atlantic City last year.

Since co-operation has become the watchword among us and is destined to become a beacon light to guide our efforts, why can we not unite in a convention such as this is to discuss every food product scientifically, upon its own merits, and lay prejudice aside in these discussions? Why be unfair to one product as opposed to another just because the second one is not produced in our state or even in our section of the country?

In the case of two foods, both of which have a real food value, it is very unseemly for an official sworn to enforce the laws to take sides to push one and suppress the other. It is our business, while occupying the positions of food control officials, to enforce the law, to suppress fraud, and not to champion one product as opposed to another.

I think, too, that this Association has placed itself in the wrong position when it opposes admitting to its membership municipal and public health workers whose work is along similar lines to ours. This is certainly not co-operation—this attitude. The voting power of such members can be defined later, but I think that by all means some way should be found to let these workers affiliate with us as suggested by Dr. Alsberg at the convention last summer. It seems to me that this plan can not be opposed on any other grounds but narrow political and partisan grounds. Surely, this Association is larger than that. It is larger in purpose, in interest, in mind, and in conception than this.

CO-OPERATION OF FOOD CONTROL OFFICIALS WITH THE FOOD ADMINISTRATION.

At first we, as Food Control officials and the officials of the Food Administration did not understand each other. Especially was this true with the state food administrators. Often we would get our wires crossed. We didn't understand each other's purposes and functions. Perhaps there was some jealousy. At any rate, there was not much co-operation during the first few months after the food administration took charge of the food supplies.

But now this has all been changed in our state. The local

and state food administrators are showing a fine spirit of co-operation. Their methods are very effective, too. In Georgia it has become the custom to give duplicate reports on examinations of ice cream to the office of the state food administrator. If these reports show below the required state standard for butter fat, then the sugar division of that office cut off the violator's sugar supply. This is also very satisfactory to us, since we get the same result that we would get by longer and more tedious methods.

DISCUSSION OF CO-OPERATION TAKEN UP BY OTHER MEMBERS.

PRESIDENT FOUST: Is Director Lea present? (E. J. Lea, Director Bureau of Food and Drugs, California, was not present.) I think it might be well if anyone desires to speak generally on this report, to do so. If not, we will take up these recommendations and proceed one at a time and get along as fast as possible, so I will ask you, Mr. Purcell, as you have the paper, to take the first recommendation. That is the best way to do it.

MR. BENJAMIN L. PURCELL: This first recommendation is with reference to the reports to be made by the various state departments to Mr. Abbott's office in Washington, the Bureau of Chemistry. He has outlined to you the purpose of these reports and the good that can be accomplished by them, and there is nothing I am sure that I can add to what Mr. Abbott has so well said, that would impress upon you the importance of your very cordial co-operation in carrying out the purposes set forth in this first recommendation, composed of nine sub-sections. Mr. Abbott very forcibly said at our Atlantic City meeting that we were given to reporting and being satisfied in seeing that resolution printed in the Annual Proceedings, and taking no further action to carry out the resolution. It has occurred to me that if the members of this Association as individuals are willing to co-operate to the extent of making their reports monthly to Mr. Abbott's office in the Bureau of Chemistry, they would feel a much greater personal responsibility, and I am going, therefore, to suggest to the Chair, with reference to this first recommendation, that in taking the vote on it you ask each man who is in favor of the resolution and who will agree to make these reports monthly for the next twelve months, to hold up his hand and pledge himself to carry out at least in part the spirit and intent of this recommendation.

MR. R. E. ROSE: Mr. Chairman, I am fully in accord with the Commissioner from Virginia. I have found it of much importance to obtain from the other states a clearing house. It has given me information as to what is going on in adjoining states, and as I have maintained for years, an active and genuine co-operation between the federal and the state officials would be of immense value, not only to the federal execution of the law, but of the state. In my particular state probably ninety per cent of the manufactured foods consumed are shipped in from the other states. We have very little manufacturing of foods in our state. Our inter-state commerce is composed almost exclusively of mining products and lumber, while our food is largely imported from our adjoining states.

I am heartily in accord, from my personal experience, with the system of co-operation now inaugurated, and which I hope will in the course of a short time meet fully the recommendation by the committee.

PRESIDENT FOUST: I will ask Mr. Purcell to read the first recommendation, and we will take a vote on it.

MR. B. L. PURCELL: The recommendations are that the state officials will report monthly, by the tenth of each month, to Mr. J. S. Abbott, Bureau of Chemistry, Washington, D. C., fix the program of their work, make monthly reports, and so for. (Mr. Purcell read the recommendations again.)

Now, that is not going to require very much work from any one commissioner, and I think we will all be surprised to know what results we can get, what new ideas we can get

if we will make our reports just as full, without their being voluminous, as we find it consistent to do, and remember, that what may be trivial to you in your state may be entirely another thing in the other man's district, and he will be glad to get that information in order that he may adopt somewhat similar procedure in his own state.

PRESIDENT FOUST: I think we all understand this first recommendation.

MR. R. E. ROSE: Mr. President, I move its adoption. (The motion was seconded and unanimously carried.)

PRESIDENT FOUST: I want to say just a word. Mr. Abbott, this can be done by letter, can it not?

MR. J. S. ABBOTT: Yes.

PRESIDENT FOUST: Just a review of much of what you have done during the month. That is a very reasonable request. When we are dictating mail the last of the month, just dictate a letter stating the important things that have transpired during the month and in the form of a letter transmit it to Dr. Abbott with any important decisions of the court, important cases pending, important investigations you have made, or whatever has been done during the month. That is easy.

MR. F. A. JACKSON: Mr. President, we are having resolutions read and voting upon them. Wouldn't it be a good plan to get a report from the Credentials Committee first?

PRESIDENT FOUST: Thank you for calling my attention to that. We will, for the time being, postpone further consideration of the report on co-operation and voting, and hear the report of the credentials committee.

REPORT OF THE CREDENTIALS COMMITTEE.

The report of the Credentials Committee was as follows:

New York—G. L. Flanders, E. J. Wheeler.

Maryland—Fred C. Blanck.

Louisiana—L. C. Scott.

Michigan—Fred L. Woodworth, M. J. Smith.

Florida—R. E. Rose.

Kansas—F. E. Rowland.

Maine—A. M. G. Soule.

Texas—E. A. Golac.

Georgia—W. C. Dumas, P. A. Methvin.

Minnesota—James Sorenson, W. G. Graham, A. D. Sibald.

North Dakota—J. J. Osterhaus.

Nevada—H. B. Bulmer.

Nebraska—Otto Murschel.

Oklahoma—W. A. Walker.

Wisconsin—Geo. J. Weigle.

South Dakota—W. M. Cox.

Rhode Island—F. A. Jackson.

Ohio—Thos. C. Gault.

Illinois—John B. Newman.

Dept. of Agriculture—J. S. Abbott, Carl L. Alsberg.

Pennsylvania—James Foust, Wm. Frear.

California—E. J. Lee.

Arkansas—W. F. Manglesdorf.

Connecticut—Thomas Holt.

South Dakota—Guy G. Frary, John B. Leahy.

Virginia—Benjamin L. Purcell, H. E. Wideman.

MR. R. E. ROSE: Mr. President, I move the adoption of the report.

(The motion was seconded and carried.)

DISCUSSION OF CO-OPERATION RESUMED.

PRESIDENT FOUST: We will now take up the second recommendation of the committee on co-operation. (Read by Mr. Purcell.)

MR. B. L. PURCELL: That, as I understand it, has been taken care of, and with the consent of the Association I will omit that at present.

SECRETARY NEWMAN: Mr. Chairman, if that is offered for

the purpose of binding the future executive committees or if that was the thought, then I think it ought to be voted on.

MR. R. E. ROSE: I think so, too.

SECRETARY NEWMAN: It is apparent to you gentlemen in looking at the program that there are two executive sessions. They are so printed on the program, but up to the present time it has been optional with the executive committee. If it is the committee's intention that it should be mandatory that at least one session and as many others as the chairman of the executive committee should see fit, be held, I think it ought to be voted on.

MR. R. E. ROSE: I agree with Mr. Newman. I think it is very proper that the committee should make it mandatory as outlined in Mr. Abbott's report. I am a member of that committee and I think it is well that the Association should adopt at least one session of our annual meeting for executive work.

SECRETARY NEWMAN: Do you make that as a motion.

MR. R. E. ROSE: I do.

SECRETARY NEWMAN: I can't conceive of a convention when there would not be a sufficient amount of work for at least one executive session, and I heartily second the motion.

(Motion put by chair, and carried.)

PRESIDENT FOUST: The next recommendation, Mr. Purcell.

MR. B. L. PURCELL: "That a standing committee be appointed to report at each annual convention on the court decisions handed down during the year in a way that will guide the officials in the administration of food and drug laws."

PRESIDENT FOUST: You have heard this recommendation. What is your pleasure?

MR. R. E. ROSE: Mr. Chairman, I move its adoption.

(The motion was seconded and carried.)

MR. B. L. PURCELL: That a committee on legislation be appointed (recommendation read). That is a matter I think within the province of the president. The constitution provides for certain committees. This is a recommendation for further co-operation. If this recommendation were adopted the by-laws would have to be amended in a certain sense, would they not, Mr. Flanders?

MR. G. L. FLANDERS: It is my opinion that this body can add committees as it sees fit.

MR. B. L. PURCELL: The question in my mind is whether or not it would be within the province of the president to appoint those committees.

MR. G. L. FLANDERS: The province of the president, as I understand it, is to appoint committees not otherwise provided for. In my opinion, Mr. President, that resolution is all right if you want this additional committee. I would like to ask first what the committee on legislation is going to do. It is a pretty broad field.

MR. J. S. ABBOTT: Mr. Chairman, my thought in making that suggestion was simply this: that between conventions of this Association many times there are important statutes enacted in the states, by cities, and by the federal government. I think this is a good place to review those statutes, that is have some reviewing body like a committee that knows how to write a report on such matters to give us in general the drift of legislation. Of course, those of us who will be interested in the details of that kind of legislation after we have heard this report can take steps to get copies of all that legislation throughout the country, and keep up to date on state, city and federal laws, and I think it would be a valuable thing for us to have. If it is the function of this Association, as stated in the constitution, to promote legislation of a beneficial character, I think we ought to have a report annually on the current legislation.

MR. G. L. FLANDERS: Mr. President, may I say a word more? It seems to me we ought to have a resolution about what this committee shall do, and then define the status of the committee.

MR. R. E. ROSE: Mr. President, I think we are a little bit at sea. As I understand the constitution, the legislative committee is for the purpose of recommending legislation,

and as I understand this committee is to pass on legislation that has passed. I may know of legislation in my state or in the adjoining states which my friends throughout the country do not know anything about, and it would be the duty of this committee to compile the new decisions that we do not all get. That is the object of this clearing house letter. When I send to the Bureau of Chemistry my monthly report, that is compiled and it goes out to each state, and we know whether there is any new legislation and have information as to what our sister states are doing along similar lines. I do not look upon this committee as one to originate legislation, but simply to report on legislation.

PRESIDENT FOUST: Permit me to ask Mr. Abbott, suppose the legislature convenes in Florida in January, and there is a bill passed and approved by the governor. Wouldn't that form part of your report for the month of January? Wouldn't it go to Mr. Abbott with the other matters?

MR. R. E. ROSE: It should go, unquestionably.

MR. J. S. ABBOTT: My thought was it would be enlightening to officials all around to have a committee give a real review of legislation showing the drift and tendency thereof. It is not simply to give copies of legislation so much as it is for them to review all of this legislation and have one central mind to consider it all, to indicate the drift of food and drug legislation.

Bringing in here further discussion, we discuss court decisions in the same way. Most of us are not lawyers, and we see court decisions and read them, and sometimes we, after we get through, do not know as much as we did when we started. I would like for somebody to review court decisions in a way that will guide us and indicate what we can do and what we can not do; and for one I would like very much to hear annually a high-grade discussion or report on these two subjects of legislation and court decisions. I do not think there is anything that would enlighten us more than to have somebody who has the capacity, to do that very thing.

PRESIDENT FOUST: We will vote on this recommendation without standing. All in favor of the adoption of this recommendation which we have been listening to, will kindly vote by holding up your right hand. (The vote was for the adoption of the recommendation.)

MR. G. L. FLANDERS: There is a great deal of work to be done on that committee. Is there some way by which they can get the information without seeking for it? I favor the resolution, but as said last year, we resolve a good deal and don't do very much. I think this ought to be put in working shape in order to accomplish the end we want.

MR. B. L. PURCELL: I call the attention of the gentleman from New York to the first recommendation adopted—Clearing House Letter; report is to be made by the State Department on New Legislation. That therefore will get to Mr. Abbott's office. My idea would be to send it out to the chairman and members of the committee.

No. 11. "That state officials endeavor to establish a plan of co-operation between the State Food and Drug Department and the Food and Drug Bureaus of the Health Departments of the cities of their respective states."

I do not think, gentlemen, there is a better way to secure a large additional protective working force to your force of inspectors than to secure the co-operation of inspectors of the Health Department charged with the supervision of food, drugs and dairy products, which is just what this recommendation is intended to cover. As an illustration we started the Bureau of Chemistry from the chief bureau, Department of Agriculture, which gives us the authority to act in our states outside the Food and Drugs Act, as federal inspectors. I found it of inestimable value and assistance to me in Virginia to carry that form of system from the state to the municipality, where it is practicable to do it. In Virginia I have extended that form of appointment without remuneration other than for actual expenses incurred, to about a dozen people who are very glad to do that work. At first some cities had ordinances that did not cover such cases as would come under the supervision of the state law, and they were very glad to take advantage of it, and we were exceedingly glad

to have the inspectors, who are going through out cities daily, and there comes under their view a great many cases which they can report to the state under the state laws, which must of necessity, on account of the small number of inspectors we employ, escape their attention. I therefore strongly urge upon you the adoption of this recommendation, and that you go back home and put it into practice, and some such system as I have outlined to you. It may be that your appointments have to be made by your boards or in some other way, but there is a way by which you can do it, and I strongly urge you to not let it go by.

I want to say one word of caution in passing. That wherever you can, let the local man of municipal authority have the credit or prestige for cases reported by him, to take a back seat and let him get the credit for it.

DR. E. L. BARNHOUSE: Mr. President, I want to suggest just a word that I think will add materially to this resolution, and that is this, that this Association authorize or adopt a resolution that each food control or drug control official at once on his return home or as soon as it is practical for him to do so, organize his state into a state organization to work in harmony with this Association, the city health officials, and to collaborate with the federal department. Give him the authority to do that, so that he is working in harmony with this Association.

MR. B. L. PURCELL: This is provided for in the next resolution, as far as we thought we could go in that direction.

MR. F. A. JACKSON: Mr. President, I most heartily indorse this resolution. I move that the resolution be adopted.

(Seconded by Mr. Rose, carried.)

MR. B. L. PURCELL: "That city, state and federal food and drug officials of this Association unite in the formation of smaller associations on a basis of common interests to study ways and means of handling local problems, and that these conferences be entirely of an executive nature."

PRESIDENT FOUST: You have heard this recommendation.

DR. E. L. BARNHOUSE: The point I want to make, Mr. President, is this: this resolution doesn't appear clear to me on delegating some authority to call this meeting within the state, and organize this state organization.

MR. B. L. PURCELL: We have another one, later on, that covers that more completely.

MR. R. E. ROSE: I move its adoption.

(Seconded by Mr. Jackson; carried.)

(Mr. Purcell read No. 13.)

MR. B. L. PURCELL: That needs no comment.

PRESIDENT FOUST: Gentlemen, you have heard the recommendation.

MR. R. E. ROSE: I move its adoption.

(Seconded by Mr. Jackson; carried.)

(No. 14 read by Mr. Purcell.)

DISCUSSION OF PROGRAM AND PUBLICITY.

SECRETARY NEWMAN: I enjoy the idea that Mr. Abbott had in his mind when he offered that resolution, but I want to say that I have had three years' experience with this Association and some experience with some other associations, and if he or any other man can accomplish what he has outlined, I say, "God bless him." It ought to be so, it is a worthy resolution, but I rise to remark about it because sometimes resolutions offered infer that certain efforts have not been made. If you remember the Secretary's report this morning it showed a meeting of March twenty-second. Mr. Abbott was in the room. And we got up the program. You should at least get out a program of men whom you know are going to be here, and you should not get your program out so far ahead that there is a doubt about a large majority of them. There is nothing so bad as going to a convention and having fifty per cent of the people not in the room for one reason or another. When we met the committee to work up the program and they assigned the people for the papers and those to lead in the discussion, they authorized the

secretary to fill in. Immediately these people were notified, and some of them courteously replied at once that they would or would not, they could or could not. For those that could not or would not we had to pick others. Some of them were a month responding, and some of them declined. There was a month gone before we knew we had to substitute. The program was held up. The president wired me, and wrote me, "Get that program out." "Send me twenty-five copies." Then I would get a different answer from some of the people who had important papers. The program was not given to the press until two weeks before the opening of the convention, and then, gentlemen, that program was sent to people who were to have papers, and even then after receiving the program some of them wired me their plans had been altered and they could not take part in the program. Others had written and accepted, and then their plans had been changed and they had forgotten. Of course, they have other things to think about besides the convention, but when they received the program in spite of our efforts to get it accurate they sent in letters that their plans had been changed and that they could not be on the program. I say it is a worthy effort, but from my experience it will be pretty near the millennium if you get a program out thirty days ahead of the convention, that will be at all accurate.

The president reminds me that the executive committee asked me to get copies of all these papers in order that we could have press notices prepared. It has been the custom in this Association for some years to have copies of the papers submitted. You have all been asked to prepare copies for the stenographer, for it saves a lot of time and money. Three people of all the number on this program sent me extra copies in advance. It certainly is desirable to have the utmost publicity, and I have been considering some things that the executive committee ought to read certain papers because I think the policy of the Food Association should be to know the gist of certain papers. There might be papers given with the best of intent, that would be very harmful. I have thought at times the executive committee ought to look over certain people's papers. If the executive committee can't get them, they can't look them over, and it is very desirable that they should get them. Certainly some member of this Association knows what the important things are that should be given to the press.

MR. B. L. PURCELL: Mr. President, I might say in explanation that our Secretary understands, of course, that this was not intended to in any way criticize either the action of the executive committee or those who are responsible for the present program. The fact of the matter is, two members of this committee had a hand in making this program and are in part responsible for the failure of those who are not here, so that he must disabuse his mind of any purpose of criticism, as we only thought to get these papers so that we could make a synopsis of them and take the salient points and give them to the press in order to conserve space in the papers. I am satisfied it would be personally agreeable to the members of the committee if it was handled in such a way as to make it conform to the ideas of the members of the Association, and, instead of the 30 days in here we might say as far in advance as it was found practicable, that these papers be submitted to the executive committee.

SECRETARY NEWMAN: Mr. Purcell, I think this might help there. It is your committee's intention to get out an interesting program, and to get out an effective program. If you are going to print a program thirty days before the convention, unless things change materially from the past, you will have an inaccurate program that is undesirable. The executive committee should make it mandatory to get up its next year's program within sixty days—as I said before, it takes a long time to get replies from them and pick men to fill in in the place of those who decline. We started in March, and we got right at it, and there were quite a few shifts on this program. I left two names on the program, of people that I had been advised could not be here, but I left them on hoping that they would send their papers or a representative, that we might have them

read. I think it would be wise to ask the executive committee to start to have a meeting on the program for the coming year within 60 days after the adjournment of the convention. We have in our minds right then, topics that come up here, as suggestions for the next year. They are fresh in our minds, and I believe that would be important. And if you start two months after the adjournment of the convention you have got more time.

MR. B. L. PURCELL: I think 60 days is a little early. I think, too, if we could get acceptances and get the papers from people 30 days beforehand, even though those people didn't come, their papers would be here and they could be read.

I think we might also confine this resolution, or make it applicable to members of the Association only, and not to outsiders whom we invite to take part in the program. If we invite a gentleman to come and speak on some specific subject or on one he may select, and the executive committee passes upon it, we would hardly be justified, I think, in sending him back his paper and telling him he must rewrite it. We must exercise care and judgment in selecting our outside speakers and hold our Association members responsible only for their utterances. We have some little control over them, but doubt whether the proprieties would go so far as to require a distinguished guest to give you in advance what he is going to say. I think if the Secretary would allow me to suggest that this be made applicable to members of the Association, and that the executive committee would consider the programs three months after the adjournment of this meeting, that it would give us ample time.

PRESIDENT FOUST: I would suggest this, that on the last day of the program you take two hours of the closing session, when all the commissioners are here, so far as it applies to the membership of this Association—of course, it could not apply to the outsiders, the distinguished people that we would have on the program—that at that time we prepare the program and have them consent to prepare the paper, and that would only leave a few papers, possibly three or four, maybe five, where outsiders would be brought here, and that could be done by correspondence, and in that way I believe it would be better than holding it 60 days after we leave here, because we would all be here, and letter-writing isn't nearly so prompt and satisfactory as to meet face to face and talk over what subjects we are to consider next year. After we meet here Friday, things will develop that will be considered and many of them we may forget, but it will be fresh in our minds Friday. Let us make up two-thirds of this program, get commissioners here to consent to handle the subjects and agree that they will furnish the Secretary with a copy 60 days prior to the meeting of what they are going to have embodied in that paper.

MR. B. L. PURCELL: The committee desires to withdraw this recommendation and substitute yours in its place.

MR. JAMES SORENSON: Mr. Chairman, this is the first time I have ever had the pleasure of attending one of these conventions. I have been especially interested in this last discussion. I don't believe if a member of this organization gets up a paper or a discussion to be presented at a convention, that that should be passed upon by the executive committee. I do not believe that is the right method. If I get up a paper I want to present that paper without someone passing on it. I will let the members here act as a jury. If I am entirely on the wrong track, I am willing to be set right by the convention, but not by the executive committee.

MR. B. L. PURCELL: I think Brother Sorenson has a wrong idea about the recommendation. The object is to get these papers in to the executive committee a sufficient length of time before they are to be read, in order that a press notice may be prepared on the paper, outlining the salient features of the paper. These press notices or abstracts would be prepared by the committee and multigraphed and sent to the press throughout the country, and then the press would release them before they are read. In that way we will have some general publicity, and it won't be left to the newspaper

reporters to come and listen to what we read. My idea is to give them publicity, not to censor them. I wish that the executive committee, whether they adopt this resolution or not, could get their papers in early enough that press notices could be obtained, so that we could give some publicity to it, that is if we want to make ourselves a factor in this thing, in a broad sense, throughout our country.

DISCUSSION OF CO-OPERATION RESUMED.

PRESIDENT FOUST: We will take up the next recommendation of the committee and this one will be re-drafted and considered later.

(Mr. Purcell read the 15th recommendation.)

PRESIDENT FOUST: You have heard this recommendation, what is your pleasure? I believe it will have to be posted, it is a proposed amendment to the bylaws, and voted on later.

MR. J. S. ABBOTT: Mr. Chairman, these two recommendations, at the close here, ought to be considered by the constitution committee and recommendations made by them, but this is simply very general preparation to get the facts before the Association.

PRESIDENT FOUST: Can't we take it as a suggestion now to the committee on constitution that we provide for an amendment to be voted on later?

DR. E. L. BARNHOUSE: Mr. President, I move the resolution as read be adopted and the recommendation of the convention be reported to the constitution committee.

MR. G. L. FLANDERS: For your information, the committee on constitution has taken that matter up.

PRESIDENT FOUST: Then we will pass that and take up the next.

(Mr. Purcell read the 16th recommendation.)

DR. E. L. BARNHOUSE: Mr. President, I believe that that resolution ought to provide for the men in the state whose duty it is to enforce the food and drug laws, to be authorized to perfect that organization.

MR. G. L. FLANDERS: Inasmuch as this committee has considered the resolution and the gentleman from Missouri has a little different notion, I would like to suggest that we pass upon this and let him offer a resolution covering the ground he thinks ought to be covered, a special resolution.

DR. E. L. BARNHOUSE: I am not objecting to anything in that resolution; I want to suggest that some official should be given authority. Suppose in Missouri the health commissioner attempts to project an organization of that kind and falls down on it. That doesn't convey any authority on me to do it, or on anybody else to do it. It says the food official may.

MR. G. L. FLANDERS: Mr. President, in line with what Mr. Purcell says, I would suggest that this body has not the power to authorize, but if he would offer a resolution that we recommend that the state official take such action, that would cover it.

DR. E. L. BARNHOUSE: That is all I ask for.

MR. G. L. FLANDERS: Have it put in a special resolution.

MR. J. S. ABBOTT: No. 12 covered, as I thought, the idea that Dr. Barnhouse mentioned. One of the details of any effort to establish co-operation between state and city organizations would be the establishment, I take it, of an association within the state. If you wish us to put that down, it is recommended:

That state food and drug commissioners form associations within their respective states between the state organization of food and drug control, and the city organization of food and drug control.

I will offer this as an amendment to that last resolution and move its adoption.

(Motion seconded and carried.)

PRESIDENT FOUST: Are there any other remarks with reference to the report of the committee on co-operation? If

not, we will pass on. I would suggest that Mr. Abbott embody these recommendations and their adoption in the next clearing house letter, so that the commissioner will have it before him, and in particular that he makes this monthly report. That is the most important recommendation of all. I am in hearty accord with it.

Since Dr. J. W. Wright is not here, I have asked Commissioner Newman if he is in shape to take up his subject, and he says he is. We will hear the report of the Committee on Milk Regulations, J. B. Newman, Chairman.

REPORT OF COMMITTEE ON MILK REGULATIONS WITH INTRODUCTORY REMARKS.

J. B. NEWMAN, CHAIRMAN.

MR. PRESIDENT AND GENTLEMEN:

Some outstanding features in which milk claims distinction over all other foods are as follows:

It is the most valuable and the most economical of all foods from a nutritional standpoint.

It is, perhaps, the most frequently subjected to careless methods in the various stages from production to consumption.

It is the most easily contaminated of all foods.

It has come to our attention with special emphasis of late that milk has gained distinction in still another respect:

It is the most regulated of all foods.

Official investigations have established the the daily industry is handicapped by a multiplicity of over-lapping, non-essential and uneconomic rules and regulations. Many city control officials seemingly have proceeded on the assumption that the way to make milk safest is through the issuance of voluminous regulations, the longer the list of regulations, the safer will be the supply. We do not dispute the fact that milk is the most easily contaminated of our foods when proper methods are ignored, but this does not furnish sufficient excuse for the issuance of regulations that place an unjust burden on the dairymen without contributing materially to the improvement of the supply.

This over-regulation can be traced principally to two sources:

1. Inexperience and short-sightedness of officials ignorant of the fundamentals in the situation.

2. The maintaining in effect of obsolete rules and regulations no longer compatible with the progress of the times.

In the first case, these inexperienced officials have weighted down the dairyman with unessential and uneconomic regulations and in their misguided efforts have failed to realize the ultimate effect of such regulations on the milk supply and on its price to the consumer. If no other recourse was available, such a policy might escape criticism. However, the facts are that this unwise, over-regulation, largely experimental in nature, has been undertaken by persons of inexperience in the work they have taken up, who have ignored standards already existing and who have failed to appreciate and avail themselves of information collected by trained specialists who have made the subject of their life-long study.

Most of the regulations by which adequate protection can be afforded the municipal milk supply as proved by checked investigations, are grounded upon a few, simple, concise facts. In this respect a study of U. S. Department of Agriculture Bulletin 642 will be of great value and of special interest to food officials, health officers, sanitarians and dairy instructors.

This bulletin shows that the three most essential factors in the production of milk of low bacterial content are, in the order named:

1—*Sterilized utensils.*

2—*Clean cows with clean udders.*

3—*Use of the small-top pail.*

The practical value of these essential factors was proved by using them on six average dairy farms.

And further, to quote from the same bulletin:

"The results of the experiments indicate that it is possible for the average dairyman on the average farm, without expensive barns and equipment, to produce milk (practically free from visible dirt) which when fresh has a low bacterial count. By the use of the three simple factors, namely sterilized utensils, clean cows with clean udders and teats, and the small-top pail, it should be possible on the average farm to produce milk which corresponds closely to milk as it leaves the udder of the cow. A fourth factor, of holding the milk at near 10 degrees Centergrade (50 degrees Fahrenheit) as possible, is also absolutely necessary."

In his pamphlet entitled "Safeguarding Nature's Most Valuable Food—Milk," prepared for the New York Milk Committee, Dr. Charles E. North presents some exceedingly valuable information worthy of the closest attention in considering the fundamental principles for providing safe milk. He says:

"Decency distinguishes humans from animals.

"Decency adds pleasure and appetite to food.

"Cleanliness contributes most to decency.

"Milk may be safe because it is boiled, but may be indecent because it is filthy."

Experience has demonstrated that the farmer is often misled in the belief that pasteurization is a panacea for all evils, and unless the sentiment and real meaning in Dr. North's maxims are grasped and followed out, the value of pasteurization will have been greatly discounted and we shall still come far short of approaching our ideal in the municipal milk supply.

Pasteurization, we all agree is a very necessary operation in protecting the supply. In our set of regulations we are on record as favoring it as indispensable to the situation, but to place entire dependence upon it to the exclusion of other precautions is to greatly overestimate its benefit. Common sense, common decency if nothing else, should dictate to the producer the need of complying with so simple a regulation as keeping filth out of milk.

In the second case previously cited, many of these regulations referred to as non-essential and uneconomic, were framed and adopted by officials of the old school who at the time of their activities had not the opportunity to avail themselves of the practical knowledge such as is possessed by Dr. W. A. Evans, Dr. North, and well posted municipal control officials of their type who have done wonderful work in late years to safeguard the city milk supply through their intimate and practical knowledge of all factors of the situation and through their ability to discriminate between the efficient and inefficient factors entering into milk control. Many of these officials of the old school were no doubt abreast of the times in which they lived, but in the last decade or two wonderful progress has been made changing many of our views, theories and practices as related to the milk supply. The fact, however, confronts us that these obsolete regulations remain on our law books in many of our towns and cities and that little or no effort has been made to supplant them with sane, practical and more up-to-date measures. It is my personal opinion that a good deal of this trouble could probably be avoided or eliminated if sufficient compensation were paid by these municipalities to secure officials more competent to cope with the matter in hand.

In arriving at a successful solution of what kind of legal control measures and how many should be employed, we can do well to study the milk problem from the health, nutritional and economic standpoint, with due consideration to the probable effect of any action taken on each one of these phases which enter into the situation.

Scientific research in recent years has added greatly, also, to our store of knowledge relating to the food value of milk. Besides protein, fat, carbohydrates and minerals which it contains in well-balanced proportion, it has been proved that milk is a growth-promoting, health-maintaining and protective food. The research and experimental work of Dr. E. V. McCollum of the Rockefeller Institute, ex-

tending over a period of many years, has given to the world a wonderful and true story concerning the vital principles in milk, more than ever proving its right to the title of the elixir of life.

Back of this great and indispensable product is a giant industry the importance of which is well alluded to in Dr. North's pamphlet as follows:

"Dairying is often referred to as the backbone of agriculture. Agriculture depends for the best use of its roughage and for soil fertility on the dairy cow more than anything else.

"Every day the people of the United States use thirty million quarts of milk, as milk and cream, in addition to condensed milk, butter and cheese.

"The milk industry is one of the giant industries. It is close to the pocketbook of practically every farmer and close to the health of every consumer."

Milk being the greatest of all foods and the dairy industry indispensable to our agricultural prosperity and efficiency, it is clearly the duty of the control official not only to adopt measures that will insure a safe supply, but also to make this supply available for consumption to the greatest extent by practical co-operation with the producer. And in this connection we have arrived at the point where it is recognized that the enforcement of overlapping, nonessential and uneconomic regulations work a great deal more of harm than good, this rule applying alike to producer and consumer. Such an unwise policy can do naught but force a certain percentage of the dairymen out of business, bringing about a consequent decrease in the supply. Increased prices follow, making it a hardship, or even an impossibility for the very persons who most need the product to obtain it. Such a deplorable condition has already been experienced in many parts of our country. There are cases where consumers have tried to do without milk and who have tried feeding substitutes to their babies and children. Detriment to health and promotion of inefficiency have invariably been found to result. Within the past year we have witnessed the commendable efforts of regional milk commissions in different states to harmonize the different classes in the milk industry to the end that we shall have an adequate supply within the reach of all, particularly the poorer classes.

The fallacy and illogic that exist in the enforcement or attempted enforcement of these multitudinous and variant milk rules and regulations is strikingly brought out by the investigation conducted by the Massachusetts Health Department. The report of this body shows:

In sixty cities in that state, there existed 800 regulations for the municipal milk supply.

In seven Vermont cities, where there was dairy inspection, 143 different regulations pertaining to dairies were found, of which only one regulation was common to six of the cities, and three common to five of the cities.

About fifty of these regulations were individual in character; that is, not included in the regulations of any of the other cities.

Serious consideration was given to this problem by investigations conducted by the American Public Health Association, the Central Atlantic Food and Drug Officials' Association, the New England Dairy, Food and Drug Officials, and other bodies.

An extensive discussion of these conditions was taken up by the members of the International Association of Dairy and Milk Inspectors at their fifth annual meeting held at Springfield, Mass., in October, 1916. This meeting resulted in the appointment of a committee consisting of Ernest Kelley of the Market Milk Division, U. S. Department of Agriculture; George S. Hine, Dairy Commissioner of Kansas, and myself, the purpose being to investigate the matter and to get up a set of regulations—the minimum number that would accomplish the desired result; namely, to afford adequate protection and the surest protection to our milk supply without placing an unjust burden on those engaged in its production that its consumption might be made available to the largest number of consumers at the lowest possible

price consistent with safety. In addition we were to try to co-operate with other similar associations with the view of securing uniformity in the regulations, and to get as many of the associations as possible behind one set of regulations.

Later, the Association of American Dairy, Food and Drug Officials appointed a committee consisting of J. J. Higgins, Food and Dairy Commissioner of the State of Washington; W. B. Barney, Dairy and Food Commissioner of Iowa, and myself, to work with the other committee.

I had the good fortune of having been present at the meeting in Springfield, Mass., and at the New England Commissioners' meeting at Worcester. The other members have likewise profited in knowledge by their attendance at similar meetings and all have made a special study of the subject for years. I assure you that our committee has gone into the matter thoroughly and has given careful consideration to formulating a set of regulations in our opinion adequate and suitable from the broadest point of view for the protection of the milk supply. Special attention has been paid to retaining only those regulations essential to the purpose and those found most suitable for uniform application. Such a course we believe to be imperative at this time to best meet the problem. Unless sane and practical means are adopted and put into effect, we face the probability of direful consequences resulting from scarcity, high prices and much hardship which must inevitably follow a reduction in the supply.

I am now presenting to you the report of the acting committee for the committee appointed by the Association of American Dairy, Food and Drug Officials and instructed to draw up a set of regulations most adaptable to uniform application in order to insure a safe and clean milk supply. This report is submitted to you by Mr. Barney and myself as Mr. Higgins is no longer Commissioner of the State of Washington. Our report is the same as the one made to the International Association of Dairy and Milk Inspectors. Some remarks by Mr. Barney are also appended.

REPORT OF THE COMMITTEE ON MILK REGULATIONS.

Your committee wishes to state it has no intention to cover the whole broad field of milk control, but simply to define and set forth as briefly as possible the regulations regarded as fundamentally essential to safe milk from a practical standpoint. It has been our aim to eliminate the nonessential ones in order to avoid as far as possible placing unnecessary burdens on the dairyman, while retaining those that contribute materially to a safe supply. At the same time those factors which have a well-defined beneficial effect on milk quality must be maintained in effect even though they may result in additional costs which ultimately must be borne by the consumer as his share of the national health insurance.

RULES FOR PRODUCTION.

1. Every dairy producing market milk should be licensed by the city or state so that a complete record may be kept.
2. Cattle should be healthy as determined by the tuberculin test and a physical examination by a competent veterinarian. They should be tested at least once a year and where reactors are found they should be removed and a retest conducted within six months. If the milk is to be properly pasteurized, the physical examination may suffice, but the committee wishes to affirm its belief in the economic and sanitary importance of the tuberculin test. Milk should be unsalable from cows within fifteen days before calving and as long thereafter as the milk is abnormal.
3. All persons engaged in the production of milk should be free from communicable disease and from contact with any such disease. Medical examination of employees is advised where feasible.
4. Every operator of a dairy farm should, within twenty-four hours, notify the health department having jurisdiction

over his milk, of the presence of any communicable disease on his farm or among the milk handlers.

5. The water supply on premises where milk is produced should be abundant and protected from contamination. It should be free from any disease-producing organisms.

6. Privies on dairy farms should be fly-proof, and provided with a water-tight receptacle for the excreta. The excreta should be removed frequently and buried at least two feet deep, where it cannot contaminate the water supply.

7. Cows should be clean. They should be free from accumulations of dirt and their udders and flanks should be wiped with a clean, damp cloth just previous to milking.

8. Milking should be done with clean, dry hands or with a properly sterilized mechanical milker. Milkers should wear clean clothing at time of milking.

9. Some type of small-top milking pail should be used.

10. Milk should be removed as soon as drawn, to a clean place, strained through a new cotton or other clean, efficient strainer, and be cooled within one hour to 50 degrees Fahrenheit or less. It should be kept covered and be held below 50 degrees Fahrenheit at all times.

11. All utensils which come in contact with milk should be thoroughly washed and sterilized for at least five minutes with steam or boiling water. They should be kept inverted and should be protected from contamination at all times.

RULES FOR TRANSPORTATION.

During transportation from farm to city, milk should be kept free from contamination and should be held at or below 50 degrees Fahrenheit.

RULES FOR HANDLING AND DELIVERY.

1. All persons engaged in the sale of milk should be licensed by the state or city in which they conduct their business.

2. All persons engaged in the handling or delivery of milk should be free from communicable diseases and from contact with such diseases. The operator of any milk plant should immediately advise the health department of the presence of any such diseases among his employees or in their homes.

3. The water supply of all establishments where milk is handled should be pure and free from disease-producing organisms.

4. Proper toilet facilities should be provided for all employees, together with wash bowl, soap and towel for the cleansing of hands.

5. Where pasteurization is performed, a temperature of approximately 145, and never less than 142 degrees Fahrenheit should be maintained for at least thirty minutes.

6. All machinery, cans, bottles, etc., with which milk comes in contact should be thoroughly washed and sterilized with steam or boiling water; and they should be protected from contamination at all times.

7. At all times, except during pasteurization, milk should be held at or below 50 degrees Fahrenheit until delivered to the consumer.

8. Milk should be delivered to the consumer only in bottles or sealed cans.

Recommendations.

PRODUCTION.

Your committee wishes to emphatically state that many things are desirable in the production and handling of milk that may not greatly affect the bacteria count. Common decency, economy and the esthetic effect on the buyer demand close attention on the part of the dairyman to many details regarding which it may not be advisable to legislate. Such things as clean stables, whitewashing, bedding, etc., come in this category. The comfort and health of the herd depend to a certain extent on clean, light, airy quarters and abundant, wholesome food and water.

In view of these facts your committee considers that a system is advisable, which combines sanitary inspections and laboratory examinations. Practical experience has shown that the dairy score card offers the most useful medium for

sanitary inspection, because it serves as a guide to both inspector and inspected. We therefore urge the continued use of a uniform standard score card based on the fundamentals of dairy sanitation.

TRANSPORTATION.

It is recommended that covered platforms be maintained for the protection of milk awaiting shipment. Milk should be shipped in refrigerator cars, or in special jacketed cans which will maintain low temperatures. Cans of milk should be sealed at the farm to prevent tampering en route.

HANDLING AND DELIVERY.

Considerations regarding general cleanliness apply in the city as well as at the farm.

Your committee is of the opinion that the proper pasteurization of milk provides an additional safeguard without any appreciable disadvantages and is necessary with all milk except certain special classes; and it is probably advisable with those. Automatic temperature controls and recording devices are recommended.

We recommend that no dipped milk be sold either from stores or wagons. We further recommend that milk bottles be capped by machine and that the mouths of the bottles be protected by a covering.

Repasteurization of milk is undesirable.

Respectfully submitted,

JOHN B. NEWMAN,
W. B. BARNEY.

In connection with his approval of these regulations, Mr. Barney makes the following supplementary remarks:

"It appears to me that the part covering the tuberculin test is a little bit drastic and if any regulation of this kind is put in, it should cover a period of a year or so to give the dairymen a chance to make their test.

"I think, too, that the second test should not be made until not less than sixty days after the first. It has been my experience that you can easily put a lot of milk men out of business by being too drastic in requiring the tuberculin test.

"Another thing that I would criticize is that the word 'shall' should be inserted in place of 'should' in many of the paragraphs. For illustration, paragraph 8, 'Milking should be done with clean, dry hands.' This should read 'Milking shall be done with clean, dry hands.' Besides these, the regulations are satisfactory.

"W. B. BARNEY, *Commissioner*."

In closing, I might say in reference to Mr. Barney's remarks that I fully agree with him that the word "shall" should be substituted for "should" in the foregoing regulations when these shall have been finally agreed upon. In the present draft, however, the regulations are submitted to you in the form of recommendations of the committee to be acted upon by this association, and then if deemed worthy of adoption to be drafted in approved legal form.

As for the tuberculin test, which Mr. Barney holds a little drastic, I hope you will find the present moment an opportune one for expressing your opinion on this subject, and we shall also be glad to hear from you now on all phases of the subject under consideration.

DISCUSSION OF MILK REGULATION'S REPORT.

PRESIDENT FOUST: Gentlemen, you have heard this splendid report. According to the program Dr. B. H. Rawl, of the U. S. Department of Agriculture, Washington, D. C., is the first to open the discussion. Is Dr. Rawl here? (Dr. Rawl was not present.) Is Dr. John W. Duke, Guthrie, Oklahoma, here? (Dr. Duke was not present.) Then it is open for the discussion of anyone who desires to take the floor. It is a very important report, deals with a very important subject.

DR. FRED C. BLANCK: Mr. Chairman, I would like to ask Mr. Newman what the attitude was on these two committees

on which he served, regarding chemical sterilization of milk utensils. Steam and hot water are mentioned in there, and the question of chemical sterilization of milk utensils has been brought up in a good many parts of the country.

SECRETARY NEWMAN: That was not discussed, Dr. Blanck, by the committee as a committee. I have had correspondence with one member of these committees about this subject, and I have had a discussion with a great many people about it. What happened in our own state three years ago in a competitive market milk demonstration at our State Fair was this: We found some market milk in the city of Springfield had a bacteria count of 900. Of course, it won the prize. Soon we read an ad of one of the chemical sterilizers that this man had used this sterilizer in his utensils, with a bacteria count of only 1,000. The next year in the market milk class of Springfield there were several samples of market milk than ran below 1,000, but they overdid it, you could taste the chemical sterilizer in the milk. I was not one of the judges, but they came to me and asked me what I thought it was, and although it tasted soapy, I suspected they were using this chemical sterilizer, and we drove out in the community from where the milk came, and one of the fellows said, "Yes, I buy it in five-gallon lots." That is the trouble. Our law says you cannot sell or offer for sale milk to which has been added water or any foreign substance. I will say that anything that anybody can do to thoroughly cleanse milk or any other food utensil deserves commendation, providing he is sufficiently well informed of everything else connected with it, so that he knows how to handle it without any contaminating or detrimental result. I do not think the farmer is so well informed, even if he knew how to use this sterilizer and properly cleanse it afterward. At the present moment you can't depend upon it. It is a dangerous thing, and if the bars are ever let down to the use of it you are going to have an unlimited use, and they will be careless all back of the line on that point just as they would be on pasteurization, without any respect to sanitation. They will be careless of everything else while depending on these chemical sterilizers to save them at the last minute. I do not believe we ought to change our position as it is today. We have had a great many letters in our state, and we would tell them that they took a great chance if they attempted to use it. I say, gentlemen, that the best thing now is the way our law reads which prevents the addition of anything to milk offered for sale. Some of the manufacturers of this product came into our office and Dr. Klein and I convinced them that they should go back and change their literature, and I will say in justice to them that they did change a lot of it, cautioning any person who used this particular product for cleaning utensils that it should not at any time be in the product.

I would like to hear from somebody else on this question. I have given it a good deal of thought, but I cannot see where we would be justified in permitting the use of this chemical sterilizer under present conditions or at least until we have an adequate force and licensing system. I am very strong for the license feature. We have recommended a great many city ordinances in this state, and as the city has no jurisdiction beyond its city limits we ask them to license a local dealer. One of the pre-requisites of the licensing of the local dealer is that he gets the consent of all producers from whom he gets milk that they will consent to city inspection. If they will not, if he attempts to have a man as a producer on his payroll that does not accept city inspection, the license is revoked and he is out of business.

A MEMBER: Has that been tested?

SECRETARY NEWMAN: I don't think so, but we have secured that regulation in several cities in the state, and it is working fine. I would like to have that in the food law, right down the line.

MR. R. E. ROSE: That is right.

SECRETARY NEWMAN: The license feature I recommend to you very strongly. It gives the poor city fellow, who is sometimes trying his best, the best protection.

PRESIDENT FOUST: I am going to ask Dr. Blanck to discuss this paper.

DR. FRED C. BLANCK: I raised that question which I asked a moment ago on account of the personal experiences I had about six or seven years ago when I was engaged in municipal milk control. About that time the first of these chemical sterilizers came on the market. You are all familiar with it. It was very extensively advertised, and I was confronted with the problem immediately in our local territory. Under a provision of our local ordinance, I ruled against the use of that preparation, for the very reasons that Mr. Newman has held. A little while later than that, in about 1914, a very interesting paper, particularly from a scientific standpoint, came out in the Journal of the American Public Health Association, on the sterilization of milk bottles with calcium hypochlorite. Those results were very striking, and it looked, particularly from the institution from which this paper originated, as though we were going to be confronted with that same problem. For a long time the question remained dormant, until last year. I happened to have had the opportunity of reading an unpublished manuscript from a very well known writer, which came out frankly advocating the chemical sterilization of milk utensils, including the milking pail and milkpan. I had an opportunity of commenting on this unpublished manuscript, and I am frank to state here that I opposed it on account of the inability under our existing conditions of milk regulation to properly control them. I knew, of course, that calcium hypochlorite or chlorine are powerful agents and that they would probably reduce the bacteria in the milk, if any of this remained in the can or milk utensil. In this particular paper to which I refer the experiments were made on that very point, and they showed that the amount of this chemical disinfectant which would have to remain in the utensil in order to materially lower the bacteria count of the milk would have to be so large that there would be a noticeable flavor left in the milk, but even with that consideration my personal feeling was very strongly that we should insist primarily upon the steam sterilization of the utensils, and failing in that, to at least require a hot water sterilization of the utensil.

One of the strongest points that appeals to me in this report, particularly, is the licensing. I have personally been interested for about eight or nine years in following municipal regulations and other food ordinances, and the general trend of all the milk ordinances that I have seen in the last eight years has been in that general direction. As a matter of fact, the Department of Agriculture last year issued a bulletin, No. 585, or guide for formulating milk ordinance, which includes that very point. Mr. Kelley and Mr. Taylor were instrumental in formulating that particular ordinance. I know that that ordinance has been circulated very widely throughout the country; I believe it is a very workable and practicable ordinance. While it is designed primarily for cities of 50,000 or less, I think it can readily be applied to cities of even larger size than that. The executive officer is given the final authority. It is rather comprehensive in that he is permitted to make all rules and regulations necessary for the enforcement of this regulation. In Maryland our problem has been and will be to stimulate the local control situation. In order to secure the uniformity which this Association and the Department of Agriculture is advocating, we are attempting to use the milk ordinance as a basis, and we have one city now that the recommendation will be based along the lines of that ordinance, which undoubtedly follows very closely this report of these two committees.

I don't quite recall in this report whether or not the committee recommends, particularly on the licensing side of the question, state licensing in those communities which do not have organized local control. Personally, in my own state, and I feel sure that probably most of us have the same situation, I do not find that it is a practical matter for my office to attempt to control the milk situation in the state. We all now, particularly those who have had municipal experience, realize that good milk is the price of eternal vigilance. It is not the price of our rules and laws. It is a question of 365

days in the year following it. For that reason our policy on milk control in our state is, wherever possible, wherever any city or town is of sufficient size, to encourage in every possible manner the establishing of a system of local control. We are going to try the experiment of trying to get nearby towns of possibly several counties to unite in a joint system of milk inspection, a system which was worked out some years ago by Professor Towne of Connecticut with a great deal of success. It has also been worked out for the state of Massachusetts, I understand, and also considered a success. I believe from our standpoint as state organizations and state officers that that will be the most effective method that we can adopt in controlling the milk distribution in our state. I believe that at least the plan we are going to try to follow in our state is to go to the large places such as the country receiving stations and the condensers and butter factories that are pasteurizing the milk, and then the final product. By that method I believe we will get more effective work out of our state organization in control, and I believe it will strengthen the cause of milk control. Furthermore, I believe as a result of studying the annual reports of most of our states, that the bulk of our attention has been paid to certain phases in our milk control and our food law. One of them has been the adulteration proposition, the butter-fat problem, the skimming, watering, then if we had sanitary laws devote our attention to the sanitation aspects of the problem.

There are a good many of us, particularly those of us who are affiliated with state departments of health, who take a somewhat different view in our milk control. Our problem, particularly from the State Board of Health standpoint, is that we prefer centering our activities. We do think that the bacteriological condition of milk is the one most important factor in its consideration, and that we have stimulated this local control through municipalities and through groups of smaller communities, emphasizing both the chemical and bacteriological as well as the sanitary aspects of the problem, and we believe there will result such a system, a more effective system of milk control in our states than we have at the present time.

PRESIDENT FOUST: Doctor, I want to thank you for this statement here. It has been very interesting.

MR. G. L. FLANDERS: Mr. President, I want to ask one question. Is it possible to use the chemical sterilizers without leaving some of it in the milk?

DR. FRED C. BLANCK: Yes, sir.

MR. G. L. FLANDERS: Does it disappear from the can before the milk comes in, or does it get mixed with the milk and then disappear?

DR. FRED C. BLANCK: It remains in the milk, but the form is changed.

MR. G. L. FLANDERS: Do you really adulterate the milk?

DR. FRED C. BLANCK: I don't think there is any question of adulteration. You could not get a qualitative test by this method.

SECRETARY NEWMAN: There is a matter that I neglected to bring to your attention this morning. I have a letter here from Mr. Bedford, of the War Service Committee, on behalf of Corn Products. (Mr. Newman read the letter.) Mr. Rutzen is here, representing the company, and will make a few remarks at this time in reference to the trip.

MR. RUTZEN: The thought and purpose of this trip is to acquaint all of you with the process of manufacture of corn syrup, cornstarch, and the various products. (Mr. Rutzen announced the plans for the proposed trip.)

ADOPTION OF PROGRAM RECOMMENDATIONS.

PRESIDENT FOUST: We have the recommendation of the committee on co-operation.

MR. B. L. PURCELL: We offer a substitute for Section 14, on page 3, embodying the ideas set forth by the President. I will read it:

"That a part of the last day's session of each annual con-

vention be set aside to arrange the program for the next ensuing convention.

"Further, that the members of this Association, whose names may appear on the program, be and they are requested to submit copies of their remarks or papers to the Executive Committee at least thirty days in advance of the date fixed for the annual meeting."

Mr. President, I move the adoption of this recommendation as a substitute for Section 14.

SECRETARY NEWMAN: I take pleasure in seconding the motion to adopt the recommendation.

(Motion voted on and carried.)

PRESIDENT FOUST: If there is nothing further, gentlemen, we stand adjourned.

(The meeting was adjourned.)

THIRD SESSION.

Wednesday, August 28, 9:00 A. M.

PRESIDENT FOUST: We will take up at this time, on Wednesday's program, subject three, "The City Health Officer's Function in Food Control," by Dr. J. W. Wright, Director of Public Health, Erie, Pennsylvania. Dr. Wright is quite sick but we had hoped that we would get Mrs. Wright here to read the paper and appear for him. She takes quite an interest in matters pertaining to organized food control work in general. Dr. Blanck will read the paper; he will then continue to hold the floor until he answers it.

DR. FRED C. BLANCK: Mr. President, fellow-members of the Association: As Mr. Foust just indicated, I will first read Dr. Wright's paper and then open up the discussion on this important subject by throwing out some observations of my own and then also suggesting some possible lines of development in municipal food control. I will read now Dr. Wright's paper.

THE CITY HEALTH OFFICER'S FUNCTION IN FOOD CONTROL.

By DR. J. W. WRIGHT.

Director of Public Health, Erie, Pennsylvania.

Mr. Chairman and Gentlemen: It is obvious that the functions of a health officer in a community of any size are chiefly executive, hence his relations with those who directly come in touch with the control and management of food products must be, to a very great extent, through the medium of departmental employees working under his supervision.

In order, therefore, for a health officer to properly develop his work it is necessary for him to have a staff of employees who are thoroughly interested in the subject at hand. In addition to this, each person thus engaged should be fully informed as to what constitutes pure and wholesome food supplies from the source of production to the detailed points of distribution.

To obtain this information it is essential at the present time that food inspectors receive thorough training for this work either through the medium of an institution where special instruction of this character may be given or intensive work under the direction of a thoroughly informed officer in one of our larger cities or of some up-to-date state department.

With such preliminary requirements, a moderate degree of enthusiasm and a willingness to carry out in detail the rules and regulations of an active health department, a food inspector should be able to give to his chief sufficient knowledge of the subject in hand as to enable him to work out in detail such phases of food inspection as the individual case may require. Work of this character will necessitate frequent direct supervision from one higher up in authority.

Under ordinary conditions, with a simple, direct food code,

and a card index form which covers the essential points of the work in a few terse terms, all needful outlines may be readily placed before the chief's eyes in such a manner as will enable him to quickly and readily grasp all details of essential importance.

I am not presenting to your body any forms covering this work, as I know that such are already used by you and that any I might submit would be but copies or modified duplicates of those with which you are already familiar. With this as a prelude, I am certain that the subject of my paper can be disposed of in a very few words.

The duty of the health officer is to see that employees working under his direction carefully carry out the details of such food regulations as may be provided for by his local municipal code, in the absence of which the laws and regulations provided by the proper bureau of the state should be used as a standard for such procedure. In extreme instances, where neither local nor state regulations are available, the admirable code of the United States Department of Agriculture may be used with most satisfactory results, as a standard for work of this character.

The health officer should not permit himself to become a perfunctory personage, and should not, even when satisfied that he has thoroughly competent help, be content with their work, but should make it a point, regardless of the size of his community, to inform himself personally regarding the conditions existing in places where food is prepared and from which it may be distributed, for general or individual consumption. Admitting that in larger cities this may seem an almost impossible task, yet it is a simple matter, while waiting for our luncheon or dinner, to acquaint ourselves with the management of the place and let them know we are taking a personal interest in the details of their establishment. This, while seemingly a small matter, has, in my personal experience, resulted in material changes for the better in many types of eating places, ranging from the modest lunch counter to the more pretentious hostelry. It is obvious, in detail work of this character, that many conditions arise in small or medium sized cities which cannot be carried out without the assistance of higher authorities. In the state of Pennsylvania, we are fortunate in having a most efficient Food and Dairy Department, which we have always found ready, when called upon, to come to our aid with efficient inspectors and experts when a health officer appealed to it for aid. Through its medium we have, at all times, been able to have all kinds of foods, such as meats, milk, butter, and other similar products, inspected and examined by experienced detail workers. In conjunction with this, our State Livestock Sanitary Association looks after, in careful detail, the herds from which these products are obtained. Through the medium of our State Department of Health, the health and general sanitary conditions of the individuals producing these foods are supervised, and in a well regulated and properly controlled city Health Department, all the materials for a detailed study of diseases conveyed by food are to be found. With this fund of information at hand, it is a small matter for the city health officer, either directly or through his chiefs of divisions, to supply the state or governmental inspectors with definite data at any and all times, concerning local food conditions, thus enabling such an official, on very brief notice, to make a thorough and efficient survey of the district involved.

DISCUSSION OF DR. WRIGHT'S PAPER.

By F. C. BLANCK,

Food and Drug Commissioner, Maryland.

PRESIDENT FOUST: Now we will hear from Dr. Blanck in opening this discussion.

DR. FRED C. BLANCK: The subject of the city health officer's function in food control is one that carries, with me,

a very peculiar personal interest, in that for nearly five years I was in charge of the food work of a large city, then went to the federal service for several more years, and am now in state service.

With this rather unusual experience, beginning as a city official, I have had an opportunity of looking with considerable detail into the present municipal food control movement in this country. If you will permit me, in discussing this subject, I want to take up a few of the phases of the subject assigned to Dr. Evans yesterday, namely, the municipal food control in the United States, and in that discussion, and in order to bring the whole subject very clearly to our attention, I want to discuss my personal observation as to the present status of municipal food control in this country.

As you all know, municipal food control everywhere is vested in the municipal department of health. The municipal department of health, historically, is one of our very oldest institutions. In my own home city of Baltimore our City Health Department was organized away back in 1796. Of course, the primary function then as well as now of a municipal department of health is to study first the incidents of infectious and other diseases, then a study of their causation, and then, and that is the modern trend of health work, is a study of the prevention of these infectious diseases. As Dr. Evans pointed out in his historical treatment of the Chicago Health Department, some years ago, perhaps five years ago here in Chicago, our attention was directed along food lines to milk cans. The milk work was confined largely to the question of adulteration of milk. The meat work was more or less along the lines whether the meat was sound and fresh or whether it had become putrid and decomposed.

As he indicated also, the earlier history of food control in Chicago dealt also with the sale of fruits and vegetables. Now that same condition which held in the historical development of food control in the city of Chicago applies primarily to every city of any size. Even now we begin our work with those products. Our first thought is, what is the nature of that control? Milk control undoubtedly represents the most efficient side of municipal food control. Municipal meat inspection does not amount to anything in comparison to what all of us believe is the proper form of meat inspection. The average general rule among municipal meat inspectors is that they are not men who really make a post-mortem or anti-mortem examination at the slaughter houses, it is simply a question of, when you get down to "brass tacks," whether or not a piece of meat in the grocer's icebox stinks or not. That is about the extent of municipal meat inspection.

The same thing is true, I think, on a question of fruits and vegetables; so, as I see it, our municipal food control in this country today is not any further advanced than it was ten, fifteen, and even twenty-five years ago. If there is any one person whose experience or whose knowledge of municipal food control is different from that, I would like to know it. There are, of course, certain notable exceptions to that statement. For instance, the city of Chicago does more than that amount of work; the city of New York does more than that. The city of Cleveland has been very active in the very broad lines not only of food control but also of drug control. Now, granting that such a condition exists that our cities are not examined in such products as butter, chemically or bacteriologically; that they are not finding out whether renovated butter is chemically pure butter, that they are not examining lards to see whether they are pure lards, and other food substances that come under our control.

The question then comes up, what is the cause for this condition? Why is it that municipal food control has practically remained stationary and has not made the progress that it should? Why is it that such a condition exists? I am inclined to believe that that condition exists due to probably three causes; at least three occur to me. One of them is the lack of proper laws. Anyone who has studied municipal laws from their early beginning up to the latest publications knows this to be a fact. You do not see any municipal laws defining standards for you; you do not seem to find standards for any-

thing except milk. There are one or two cities, Boston, for instance, has a standard for vinegar, but those cities which have definite standards and laws governing the municipal sale of food products are notable for their lack of definite knowledge of the products which they are trying to control, so that I would put down as one of the causes. Another cause which I will describe would be the personnel question. Municipal inspectors of meat are usually laymen who have never had any experience whatever in handling foods other than as a consumer. The same thing is probably true of the laboratory side. In my own travels I have certainly found that many of our laboratory men in municipal work have not had the proper training to enable them to handle accurately and broadly the many problems which the food chemist must handle. The third cause which I believe may have contributed to this condition is what I may term over-confidence, over-confidence in the ability of their state organization or the federal organization to properly handle the situation. We have had that same situation among our state organizations. Only recently I read a report of one of our state departments on foods, and the statement was made that we are not paying any attention to interstate shipments of foods because the federal bureau of controls protects us and the federal law protects us on the interstate shipments. We all know the federal food and drug inspectors can give us in our various states the protection which we need against unlawful interstate shipments of foods. That same situation applies to an even greater degree in our municipalities. I do not believe that any of our state organizations, no matter how efficient, how well organized they may be, are in a position today to give the larger cities, at least in their respective states, that protection which the citizens of that municipality should have.

So those three things I believe are certainly contributory causes to stagnation in the development and progression of municipal food control. Now, having considered these causes, the question presents itself, what remedial measures may we apply? What can we, what should we as state officials do to correct that condition? The first thing that naturally suggests itself—I will discuss the question of laws first—would be either to encourage the municipalities to have adequate legal control, or the other alternative from the law side is to extend the enforcement of our existing state laws so as to make it possible for the municipal health authorities to utilize our state laws to the limit. Many of our state officials are already doing that. We heard yesterday how Commissioner Purcell is working that out in the state of Virginia, and the state of Michigan and many of our other states are using that system. If any of our state laws are so phrased that it is not legal for us to delegate this authority to our municipalities, I would certainly strongly urge on those state officials to so amend their laws that they can extend this authority to the municipalities.

When we come down to the question of what we can do in assisting and in promoting the uplift and the raising of the standards of the personnel in our municipalities, I believe that each and every one of us has a very fine and a very useful and a very attractive field of work. It was my experience when associated with Mr. Abbott in the Bureau of Chemistry to go around amongst the city officials. I didn't go around among the state officials very much to investigate things. What I did was to get into the laboratories because I was for many years a laboratory man, and the first thing that those men said to me was, "What methods have you got for this, what methods have you got for that? How do you test for this, and how do you test for that?" And "What should I look for on this, that and the other thing?" Those men are in many cases in small departments where they are buried. They are there at a small salary; they haven't got the educational and the laboratory facilities and the opportunity for personal contact which state officials have, and they are eager for information, but through modesty and for professional reasons they do not want to come out frankly and say, I do not know this, I do not know that, or they do not want to be called on where they do not know. That is where we as state officials can exercise a very helpful influence by

the use of tact and judgment, in learning just what the deficiencies are in both the laboratory and the inspection side of our municipal food departments.

There has also been a feeling, I am sorry to say, of what one might term jealousy between the state and the municipal departments. I know from personal experience as a city official we thought we were better than the state department men all the way through, and I have learned since January that our state department think they are far superior to any of the city men in our state. I know that all of you have probably had that same experience.

There is one thing that we have got to do in order to give this country the most efficient food control in the world, even more efficient and effective than we have it now, and that is that we have got to lay aside any of these petty feelings. I won't forget the statement that Mr. Abbott made right along this line, about a year ago, when he and I were discussing the question of municipal co-operation. I said, "Mr. Abbott, I am a city man, originally was a city man. I would go very slowly in taking up federal co-operation with the cities. I would want to go to them and I would want to study them, and I would want to see whether they can do and turn out the kind of work the federal government wants in the enforcement of the food and drugs act. I would want to do that before federal co-operation with us and that city." And I will never forget what he told me. He said, "Blanck, you are all wrong. The fellow and the city organization that is well organized and that is efficient, we will get now." What we have to do in this co-operative work is to bolster up our weak sister, and just that same thing we as state officials have got to do with our city officials.

There is another side that was brought out in a little meeting of our association in the city of Philadelphia. The food administrator of Pennsylvania was discussing the subject and he was asked this question, "Why has it been that the state food administrators have almost generally ignored the food control officials?" He said, "The thing is simply this, gentlemen, they do not know you, and they are men that are green in the work, but even if they did know you they wouldn't come after you. The thing for you to do is to go to them." Now, I was one that happened to be a state official at that meeting, who had that feeling that my state had been ignored. As soon as I got back from Baltimore I went to our state official administrator and said, "Here is my organization, here is our laboratory. At any time that you can use us, call on us and we will be there to deliver the goods." And from that day on we have had the finest co-operation that anyone could want from the food administrator in our city. Now, gentlemen, that same condition can and will apply in our states in the relation between our state and our municipal food departments if we apply that same principle and go out to them and give them what we have.

I want to bring just one more thought to you, and that is, what is going to be our future food control in this country? I believe—and I am putting this idea out as my own judgment on my own experience, I have discussed it with other officials and they have felt that it would probably come, and I am going to put this idea before you—I believe that our future food control in this country is going to work itself out in something along these lines: I believe that the function of the municipal department of health officer and food control in the city is going to be to supervise the sanitation of those local food handling and distributing establishments and look after the quality or purity of the final distribution of the food product to the ultimate consumer. That, I believe, is going to be the function of the municipal department. I believe that the function of our state departments is going to be to look after the sanitation, the purity of the manufacture and preparation of the food products; in other words, in the production centers in our big plants the states will look after that. Carry it from that point to the retailer or to the wholesale house in that city. The city from that point will follow that food product to the consumer, and I believe that the function of the federal government, of course will be, as it has been, the control of the interstate features of our

food problem with the assistance of our state officials. I believe that that system will work out admirably. I believe it will give each and every one of our units its proper point in this chain from the original production to the final consumption of food products. It gives each and every one of those units a cleancut and definite field for work. I believe that if we can work out that system satisfactorily, we will have then the most efficient machinery for food control that can be found anywhere. It will be a piece of machinery that has absolutely no lost motion. As we all know, efficiency is the keynote of the present time. Efficiency will continue to be the keynote for every one of our activities for many years to come. I believe, by the general idea I have suggested, that we will go a long step forward in promoting efficiency in food control in this country. (Applause.)

MR. G. L. FLANDERS: Mr. Chairman, with your permission I will offer a resolution now.

PRESIDENT FOUST: It will be read and referred to the committee on resolutions.

(Two resolutions were read by the Secretary.)

PRESIDENT FOUST: At this time we will go back to the first paper on the Wednesday program, "Drug Standards," by Dr. Edward Kremers, University of Wisconsin. (Applause.)

DR. EDWARD KREMERS: Mr. President, members of the Association, the title of my paper I have taken the liberty to modify slightly. I have designated it, "Pharmaceutical Standards: Past and Present and Future."

PHARMACEUTICAL STANDARDS: PAST AND PRESENT AND FUTURE.

BY DR. EDWARD KREMERS,
University of Wisconsin.

The writer well recalls a visit with his Food and Dairy Commissioner somewhere in the nineties of the past century. He pointed out to this state official that, although the U. S. Pharmacopoeia of 1890 was out and supposed to be effective, in reality the previous edition was, according to law, the one in force. He also called attention to the wording of the statute, according to which any one of the dispensaries might be the legal guide, provided a given article was not in the U. S. P., but was described in one of these commentaries on our own and foreign pharmacopoeias. If not in one of these or other standard texts, a foreign pharmacopoeia itself might become the standard for the enforcement of the law of our land. Thus an American might, theoretically at least, be prosecuted because a preparation did not come up to a standard of a Hottentot Pharmacopoeia if there were such.

These absurdities, as well as others, have been removed from our statute books. Today, however, we are confronted with another set of conditions even more perplexing in practice. Having long been dependent on European countries for both vegetable drugs and pharmaceutical chemicals, in the summer of 1914 we suddenly found ourselves cut off from the base of supplies. At first this meant but a disturbance in price, soon we realized more and more that the supplies were actually being exhausted and that the further rise in prices did not necessarily imply manipulation, but actual scarcity of goods. A further new set of conditions arose when new chemical manufacturers sprang up like mushrooms and began to supply the country with their products. A reliable manufacturer of pharmaceutical chemicals is quoted as having said that one-half of these products have to be rejected because they do not come up to the standards of the U. S. Pharmacopoeia.

In addition to the honest efforts that are being made to supply our country with its wants and to make it independent of Europe after the war, your attention should be directed to others that are open to question. Let me take an illustration from another field. During the present summer, a crude drug

firm has twice circularized the agricultural experiment stations of this country urging them to induce the country element of their respective states to collect plants and to cure them to drugs. The prices offered for a few drugs are given as an inducement, but not even a reasonable list is supplied. Much less are directions given as to how to proceed.

It has been aptly said that crude drugs so-called are mostly very crude indeed. Anyone who is at all familiar with the collection of medicinal plants and the methods by which they are cured to drugs in certain foreign countries, and in certain parts of this country in particular, may well wonder what medicinal virtues will stand such treatment. It is not greatly surprising, after all, that physicians have a tendency to become therapeutic nihilists. Yet here we have a national appeal, addressed to patriotism and the sense of doing your bit, to extend a pernicious practice all over this country.

Much of what is going on in the lowering of standards is being practiced in the expectation that officials will not be so strict, or, to use a common phrase, will close an eye. No doubt those officials who have charge of the enforcement of standards of pharmaceuticals of all kinds should bear in mind the trying conditions existing at the present time. Whether that necessarily implies a lowering of standards remains to be proven. In order that we may better judge the situation, a brief review of these standards, their improvement as well as their modification, not necessarily lowering, may be worth while.

The principal standard which we have for our materia pharmaceutica is the U. S. Pharmacopoeia. The ninth decennial revision is now in force. Hence, when the Convention for the Revision of the United States Pharmacopoeia meets in Washington in 1920, the first century of our national pharmacopoeial standard will have been completed. Young as is our country as compared with England and Germany, we had a national pharmacopoeia long before these countries. The first British Pharmacopoeia appeared in 1864, the first German Pharmacopoeia in 1872, both replacing the respective local pharmacopoeias in use for several centuries.

We are, therefore, approaching an important milestone in the history of pharmacopoeial revision. The question may well arise, shall the U. S. P. be revised, as in the past, by a self-constituted authority, or shall the government take charge thereof. Centralization of power has taken place so rapidly during the past year and a half, that prediction as to what may or may not take place between August, 1918, and May, 1920, must seem foolish in the extreme. Whether the national government could turn out a better book is a very different question and one which it is useless to discuss, for only an actual comparison of government revised pharmacopoeia with the revisions of the past will enable us to answer such a question.

Very different, however, is the question of the mode of issuing our national standard. For centuries it has been the practice to issue pharmacopoeial standards in volume form. Our country naturally followed the practice of the past. Such a pharmacopoeia has always impressed me more as a codex, as the French Pharmacopoeia is aptly designated, than as a scientific up-to-date treatise. Whereas, in Portugal the official standard of 1876 remained in force until 1903, hence was not revised during a generation of the greatest pharmaceutical interest and progress, the German Pharmacopoeia of 1882 was revised again in 1890. We in our country appear not to have been guided by any necessities, but have adhered mechanically to our convenient decennial revision. The necessity of more frequent revision, at least of parts, has long been recognized and has even been authorized—the demand made in the convention being changed to the more flexible authorization—but never has the Revision Committee had the courage to comply with this request. Anyone at all familiar with the laborious revision of the U. S. P., as conducted in the past, can well understand why the Revision Committee has shirked its duties in this respect. We might as well face the situation squarely and not expect a revision of parts so long as the present methods are followed. Hence, it is up to us to give close consideration to other methods of revision which

admit of the revision of any part without affecting the rest.

So far as the method of revision of the U. S. P. is concerned, an additional word may be apropos. I refer to the vast amount of research demanded. As to the collection of current literature, I want to call attention to the digest started by Charles Rice, thrice elected chairman of the Revision Committee. Imperfect as it was for lack of funds, it started an important movement in the right direction. Fortunately, after 1905, the publication of the Digest of Criticisms on the U. S. P. and N. F. was taken over by the Hygienic Laboratory at Washington. Started by Reid Hunt, it was edited by Motter and Wilbert, later by Wilbert alone, and is now being compiled by his successor, A. G. Du Mez. The war, however, has changed many things. It has greatly delayed the publication of the Digest. That for 1915 has been ready for the printer since January, but its publication is still being delayed. I would recommend, therefore, that this body take under advisement an appeal to Surgeon-General Rupert Blue asking for the immediate publication of the Digest for 1915, and that the staff of abstractors be increased to supply scientific pharmacy of this country with the digests for 1916 and 1917 at the earliest dates possible. The "Digest" should have a place in the library of every state food, dairy and drug commission, if it is not already to be found there.

So much for this particular guide to the literature of pharmaceutical standards. This is but a beginning, and, after all, but a small beginning. Rational laboratory research is made possible by an oversight over the literature, but the experimental research itself requires much more time than the collection of the literature, important as this is not only at the beginning, but throughout the entire period of investigation. Moreover, even in the line of literature, the collection of abstracts for each year is but the beginning of the critical study of the literature on specific subjects.

By way of illustration, allow me to call your attention to an undertaking that was begun at Wisconsin some fifteen years ago. Under the caption, "A Century of the U. S. Pharmacopoeia, 1820 to 1920," a large amount of information has been collected and classified. Inasmuch as the so-called galenicals seem to have largely escaped scientific investigation, hence were most in need of scientific revision, a beginning was made with these. Library and laboratory research necessarily went hand in hand. Before a single chapter could be published it was necessary to wait for the completion of the ninth revision, the U. S. P. X (not U. S. P. IX as erroneously printed on the back of the volume). Within a year, however, after the appearance of the last revision that completed the first century of our pharmacopoeial history, the first chapter, viz.: that on galenical oleoresins, was ready for the printer. Again, owing to war conditions, its publication has been delayed, but the proof submitted will give you an idea of the scope as well as of the magnitude of the undertaking. (Exhibit.)

Aside from minor constituents, these galenical oleoresins include the following phytochemical groups of plant products: fatty oils, volatile oils, resins, and pigments. The complexity of the chemistry of each oleoresin will be better understood if it be pointed out that these group names by no means represent chemical individuals, but that the latter are exceedingly numerous. So far as the value of this revision monograph is concerned, its significance may become apparent when it is stated that it represents the first systematic attempt to apply the modern physical and chemical methods of investigations, well known in connection with the fatty oils, the volatile oils, and the resins, to this class of galenical preparations.

Fundamental research of this sort cannot be conducted adequately between revisions. After such a foundation has been laid, sufficient work remains for the revisers. Numerous other classes of galenicals are being studied in like manner. The manuscript on the oleoresins was submitted as a doctor's dissertation in June, 1917. At commencement of this year the manuscript on the Arsenical Liquors was completed. At the present rate it will require decades to cover the field of galenicals, not to mention chemicals, crude drugs, etc. More-

over, this statement does not take account of the necessity of bringing up to date, for each revision of the U. S. P., the several chapters previously revised. A considerable force of experts should be at work constantly.

Inasmuch as it is not likely that the national government will establish a pharmacopoeial research laboratory with an adequate staff of investigators, let us look about and see what agencies for research exist at the present time and what are the possibilities of co-operation.

The galenicals, to adhere to the illustration already used, were once upon a time made by the pharmacist in his small laboratory behind the prescription counter. Today they are made well nigh exclusively in the laboratories of the large manufacturer. Much as we regret the decadence of the drug store laboratory, we must admit that the galenicals made in the large laboratory are receiving much more study and scrutiny than a generation ago. The manufacturer has been financially able to employ the best scientific expert help, and, what is more, has recently learned even the commercial advantage of scientific research.

We are, therefore, no longer surprised when the American Association of Drug Manufacturers organizes committees on research and among these appoints a special committee on standards. What may surprise some of you, who look with a skeptical eye upon the historical literature brought together in the monograph, of which I have submitted a galley proof for inspection, is that this Committee on Standards has been fit to begin its researches along historical lines in the Lloyd Library.

The American Association of Pharmaceutical Chemists has also recognized the importance of this work and at its last annual meeting invited the speaker to address them on Research and Co-operation, a missionary task which he was only too glad to perform. Certainly the spirit of research is spreading. We, naturally, take a greater interest in the volumes of research published by the pharmaceutical manufacturer than in the dividends which the company pays to its stockholders. If the company can pay a greater dividend because of this research, well and good. What we are more concerned with, however, is this: that the medical chemicals patented, and the galenicals improved, do not at all become proprietary. What is even more important is that the people become imbued with the benefit that may accrue to us as a nation if we foster the spirit of research both in state and nation. The pecuniary benefit, though but incidental, will accrue to us as citizens fully as much as to the pharmaceutical stockholders who but a generation ago had only words of scorn for research in a concern that was in business for the sake of business.

What have we as individual states or as a nation to show in this direction? In most of the eastern states, pharmaceutical education, and with it such research as is likely to go with education, is still largely in the hands of private corporations, some of which, we are pleased to state, are beginning more fully to recognize their public functions and duties. Here in the old Northwest, in which public education rests on its well laid foundation, the Ordinance of 1787, pharmaceutical education was first given by the state. Since the early eighties of the past century this education by the state has spread over the Southwest and West and is even invading the conservative East. Having reminded you of this development, you are prepared to learn that the only state pharmaceutical experiment station thus far established was created by legislative enactment in 1913 in the progressive state of Wisconsin. What will please you all is to be told that it was one of your own members, who while in the senate of our state, introduced a bill that created this first pharmaceutical experiment station.

That the author of that bill need not be ashamed of his legislative child was demonstrated by the last legislature, which doubled the appropriation of the station, thus enabling it to do some important war work. That the idea of pharmaceutical experiment stations is gaining ground was shown by a resolution adopted by the National Association of Retail Druggists at their annual meeting in Cleveland last Septem-

ber. This resolution calls for the creation of a pharmaceutical experiment station in every state in the Union. That branch of American pharmacy, which has been so highly commercialized during the past twenty-five years, has been induced by the war to see the hand writing on the wall and now appeals to our legislatures to establish pharmaceutical experiment stations in order that professional pharmacy may be saved for the benefit of the public.

Contrasted with the millions with which medical research in this country has been endowed so splendidly, contrasted also with the support which the agricultural experiment stations receive from their respective states and the national government, the beginning in pharmacy is so small as to seem discouraging. However, it is a beginning and as such should hearten us to further endeavor.

Pharmacopoeial standards, however, are not the only pharmaceutical standards with which we have to deal. First in importance of the extra pharmacopoeial standards are those of the National Formulary, which, with those of the U. S. P., are the law of the land for interstate commerce transactions. Ever since the pharmacists have played an important role in the revision of the U. S. P., there has possibly been a difference of opinion between the physicians and pharmacists on the Revision Committee as to what items should be official and what not. The modern pharmacologist has desired the deletion of many crude drugs and of most of the galenicals for reasons that need not be discussed here. The body of medical practitioners, however, has continued to prescribe them, as well as innumerable new remedies and proprietaries. Hence, standards for these older drugs and galenicals, also for the new synthetics and proprietaries, were as necessary as well as, for what may be termed for want of a better designation, the standard preparations of the modern school of pharmacology.

Standards for the former were supplied by the National Formulary, an extra-pharmacopoeia, so to speak, by the American Pharmaceutical Association through its Committee on the National Formulary, of which the fourth edition is now effective. The American Medical Association, through its Council on Pharmacy and Chemistry, has exercised a control over the latter and has laid down its standards in the "New and Non-Official Remedies." In spite of the human imperfections that attach to both endeavors, each appears to satisfy a certain demand. Hence it seems strange that there should be such a cleavage in the preparation of standards along theoretical rather than practical lines. The only practical justification from the pharmacopoeial point of view may be that the U. S. P. Revision Committee, already overburdened, could never hope to cope with the enlarged problems by following its present methods of revision.

Another national movement that has to deal with pharmaceutical standards, though not directed with this objective in view, is the work of the Committee of the Association of Official Agricultural Chemists. So far as chemical standards are concerned, the work of this committee naturally overlaps that of the sub-committees on chemistry of the U. S. P. Revision Committee. Inasmuch as the work of this committee is closely affiliated with that of the Bureau of Chemistry of the Department of Agriculture, the government agencies that have to deal more or less with standards may here be mentioned.

First of all we have the Bureau of Standards, which not only deals with weights and measures and all sorts of physical measurements, such as the standardization of thermometers, etc., but which has also taken up certain phases of chemical standardization.

So far as scope is concerned, the work of the Bureau of Chemistry is even more important. Inasmuch as the Chief of this Bureau is the principal administrator of the Food and Drugs Act of 1906, this Bureau not only co-operates with the Committee of Official Agricultural Chemists already referred to, but establishes pharmacognostical standards as well.

The Hygienic Laboratory, in addition to the literary work on the Digest, previously mentioned, has established physiological standards for vegetable and animal drugs and their

preparations, also for serums, vaccines, etc.

Such is the multiplicity of agencies, national, state and professional, that are working toward the establishment and improvement of standards.

A discussion of pharmaceutical standards would be incomplete, especially at the present time, without reference to what may be designated ex-standards. Reference has already been made to the practice of deleting certain standards from the U. S. P. and delegating some of these deleted standards to the National Formulary. However, not all have thus been referred in the past, though a demand for such standards continued even after the deletion of the preparations in question from the U. S. P. Hence, some years ago the American Pharmaceutical Association appointed a committee to revive such standards, either in their original form or in a revised garb. The practical necessity of such historical work has already been alluded to in connection with the work of the Committee on Standards of the American Association of Drug Manufacturers. Its practical significance has been brought out strikingly since we have entered the war and have had to restrict the use of certain preservatives and sweetening agents. Thus, e. g., both the U. S. P. and N. F., in their latest revisions, have substituted glycerin for sugar in certain preparations. As a result of the scarcity of glycerin, makers of these preparations have gone back to the older formulas of both national standards.

This now brings us to what may or may not be viewed as a lowering of standards because of the war situation. If a maker of such a preparation labels his products correctly, can he be accused of lowering the standard? The latest formula is supposed to represent the best practice. Hence, is the substitution of an older formula to be regarded as lowering the standard? If so, is it a justifiable act at the present time?

Very different in character is the lowering of a standard such as was practiced by the Revision Committee itself shortly after the U. S. P. of 1900 had made its appearance in 1905. The alkaloidal standard for stramonium had been advanced to 0.35. Complaints came in from all sides that no such stramonium was available, hence the standard was reduced to 0.25. Was this reduction necessary; was it in any way desirable?

This and similar acts are a result of the present method of revision, which attempts the standardization of a thousand and one items when a single item, or but a few items, demand immediate consideration. If stramonium with 0.35 alkaloid was not available in 1906, it might have been made available in quantity in 1907. I have already alluded to the crude character of our so-called crude drugs and to the ignorance of the people who collect them. No difficulty need be experienced in raising stramonium with 0.35 alkaloidal content. However, so long as the U. S. P. accepts the stuff gathered by the illiterate whites of the southern mountains as the standard for this country, so long drug growers will refuse to raise a stramonium of 0.35 alkaloidal content. As a matter of fact, much of the progress that has been made in the cultivation of medicinal plants in this country in the last few years, will be jeopardized if, after the war, we permit the present low standards to continue.

Permit me to bring to your attention another lowering of the U. S. P. standard in the revised edition now in force. At the Urbana meeting of the American Chemical Society in 1915, the writer submitted to the Division of Pharmaceutical Chemistry samples of Nos. 20, 40, 60, 80 and 100 powder of digitalis. No. 20 powder had been prepared by the Pharmaceutical Experiment Station for clinical use in an eastern hospital. The use of analytical sieves revealed the character of the finer powders and ash determinations proved the suspicion. Whereas, the No. 20 powder contained 10 per cent of ash, the No. 100 powder contained not much less than 80 per cent of ash. A study of the literature revealed that the numerous ash determinations varied between 10 and 30 per cent for the entire leaf. The ash determinations not only revealed that the inorganic content increased with the fineness of the powders, but that the No. 20 powder could be rendered

practically free of adhering inorganic soil by the mechanical means of milling and sifting. Yet the last Revision Committee increased the ash standard from 10 to 15 per cent. The person who boasts of having brought about this lowering of standards has more recently rediscovered the simple process by which digitalis can be freed from soil impurities.

If these two illustrations show how high standards can be maintained without hardship but by the substitution of rational and scientific methods in place of ignorance, a few other illustrations may reveal other directions in which our standards are capable of improvement. The U. S. P. defines Belladonna Leaves as "The dried leaves and tips of *Atropa Belladonna* . . . without the presence or admixture of more than 10 per cent of its stems or other foreign matter . . ." Anyone who has had experience in the harvesting of belladonna leaves knows that the raising of this medicinal plant will not be an economic possibility after the war if the leaves must be hand picked. This is not at all necessary. The entire over-ground portion of the plant may be harvested hurriedly, a matter of greatest importance when the entire crop may be endangered by early frosts. Dried, these plants can be forced through a very coarse sieve. Not only will the stems remain behind, but the bulk of the petioles as well. Seeds and fruit tissue, as well as entire fruits, may likewise be separated by mechanical means. In this manner the Pharmaceutical Experiment Station last season turned out a 300-pound lot of finest belladonna leaf powder much purer than demanded by the U. S. P. and of much higher alkaloidal content.

Another standard all out of sorts with modern drug economy was corrected in the U. S. P. of 1900. The 1890 definition for Oil of Peppermint included the name of the drug Peppermint, although for years no one in this country or Europe had distilled oil of peppermint from the drug, but from the freshly harvested plant. What the new definition did require in the way of the improvement of the standard was a demand that the oil as distilled be rectified. The wholesale druggists required several years of education to learn that they no longer were permitted to sell an oil as U. S. P. which had been contaminated by fireweed or other weeds in the process of harvesting and field distillation, but that any reasonable commercial oil could be brought up to U. S. P. standards by the process of rectification demanded by the U. S. P. after 1905.

But I must not take up any more of your valuable time in the discussion of specific illustrations, instructive as they may be, for a better appreciation of the general principles involved in the establishment of and enforcement of standards.

The subject which I have endeavored to outline, ever so briefly, is that of pharmaceutical standards, past, present and future. The importance of the past is well recognized in the evolution of standards necessary for a better understanding of the present enforcement thereof. Its practical importance is strikingly indicated by the recent undertaking of the Committee on Standards of the American Association of Drug Manufacturers, also by the necessities of the war situation.

The importance of the future has been suggested by pointing out to you that with 1920 we shall enter the second century of U. S. P. revision and that the various forces, national state, and professional, working toward the improvement of our standards, are not co-ordinated as well as they might and should be and that the milestone which we are approaching rapidly suggests that we bestir ourselves and consider whether our standards in the future shall be government-made or otherwise.

The present is everlastingly with us. While there is no use crying over spilt milk, i. e., over any errors which we have made in the past, and while it would be wrong to put off all experiments into the future, or even to wait until the war is over, we should live up to our present opportunities, difficult and meagre though they be. One of these opportunities is to keep alive our interest in maintaining the highest standard practicable and to make possible a constant revision of standards by means of the best modern methods. (Applause.)

PRESIDENT FOUST: I want to thank Dr. Kremers for this splendid paper. We will now hear the discussion of this paper by Dr. W. A. Puckner, American Medical Association, Chicago.

REMARKS OF DR. W. A. PUCKNER.

DR. W. A. PUCKNER: Mr. Chairman, when your Secretary asked me to discuss Dr. Kremers' paper I knew full well that Dr. Kremers would cover the subject so fully that there would be little to add or little to discuss. I accepted the invitation chiefly as a means of having an opportunity as an outsider of expressing to this Association my appreciation of the valuable work which is being done.

Nothing is so necessary as a uniformity of standards, a working together in the judging of drug supplies, hence I wanted to express my great interest in the work of this Association. I thoroughly agree with Dr. Kremers that the method of revising the pharmacopoeia is in need of revision and in need of centralization of authority. As a member of the Revision Committee I know that the fifteen members who are the Executive Committee and the remaining thirty-five who have dominated and have been overburdened with work, have let many things creep through which have been studied only by a few of the committee, and yet no one has felt the authority of insisting on more thorough work. This, I believe, is one of the chief reasons for a revision of the pharmacopoeia under the authority of the government, that a smaller number of men will be an authority, will be obliged to assume the responsibility, and that in this way the revision will be a more carefully conducted piece of work.

I heartily agree with the plan that one central authority should provide the standards for the judgment of drugs throughout the country. I see one great advantage further, but one which would bring about a considerable opposition, I am afraid, to such a centralization. Professor Kremers has very properly said that attention should be given to the subject of drugs, first that they should be standardized and that the most careful of tests should be given to them. No doubt if the pharmacopoeia were taken charge of by the government, the first question would be, "What drugs shall be in the pharmacopoeia? What drugs are therapeutically valuable and should be included?" That would involve such a housecleaning that the standardization of those which would remain would be very much simplified. It would bring about such a shout of opposition to the housecleaning that I am afraid it would be an exceedingly difficult matter to get the consent of Congress or to have Congress pass an enactment authorizing such a revision or such taking charge of the drug standards by our government. That is, it would undoubtedly mean a thorough housecleaning, and it would be opposed by all commercial interests.

Just a word with regard to the attempts towards standardization. The Department of Chemistry of the American Medical Association has been making its own standards, which, of course, are not obligatory. The Food and Drugs law specifies that a drug shall be adulterated if it is below the professed standard. That is about the wording, I think. We have been working on that basis. We have been establishing standards for proprietaries. In the case of unproprietary drugs which were not official, standards have been submitted to the firms which have made the drug, for their indorsement. If the firm agrees to the standards and its supply is considered satisfactory, we publish in books containing these standards a statement that the firms' product complies with this standard. We send the book to the firm and ask them to advise if the book contains any inaccuracies. We believe in this way under the food and drugs act the standards of unofficial remedies are made obligatory upon the firms which have agreed to use them, but, of course, in the case of firms which do not agree to use them, their products can not be considered standard. (Applause.)

PRESIDENT FOUST: I want to thank Dr. Puckner for com-

ing up here at this time and expressing his views on this very able paper.

DR. ALSBERG DISCUSSES DRUGS.

DR. CARL L. ALSBERG: Mr. Chairman, I can't resist the temptation, after hearing Professor Kremers, to make a few comments on his paper. Everybody knows that Dr. Kremers is the foremost investigator in his particular field. I merely wish to state that in general I very fully agree with the position he has taken.

I think it is very important that there shall be some modification in methods of preparing the pharmacopoeia, if only for the sake of appearances. The present situation of the people who are interested in the commercial phase of the question themselves take the largest share in the preparation of the standard, which is the only standard that has the force of law under the Food and Drugs Act. However sincere and earnest these people may be, they must evidently have a one-sided point of view if they believe we have a one-sided point of view. We as officials believe that they also have a decided point of view, the point of view of the manufacturer.

I am quite confident that a somewhat more centralized method of revising the pharmacopoeia, such as suggested, would undoubtedly be a very great advantage. Passing to the subject which Professor Puckner discussed, the matter of deciding what goes into the pharmacopoeia and what does not go into the pharmacopoeia, that is a matter that has puzzled me a good deal. I think Dr. Puckner has put his finger on one of the great difficulties that arise in that connection. Dr. Kremers has considered only the question of the standard of the individual thing, rather than what should have been standardized. Now, the moment the matter is centralized and there is a kind of housecleaning such as Professor Puckner suggests, we are at once confronted with the probability that the general charge will be brought not merely by the manufacturers of products, but by many physicians in the various schools and the government, that the pharmacopoeia was creating an automatic method to say what was and what was not satisfactory to go in a pharmacopoeia. That problem will be brought out and has some force. There are scores of crude drugs which are pretty widely used and widely dealt with; there are some things not in pharmacopoeia and we haven't any standards for them, the government department must be impartial, and it is our duty to protect the man who wants to buy drugs just as much as it is to protect the man who wants to buy anything else, and we have in the field men whose efforts have been devoted to those things for which no standards have been adopted, which are either grossly and intentionally adulterated very extensively, or are adulterated on account of careless gathering, like pennyroyal, for instance. You have gone out and bought pennyroyal in the market, and you found it consisted almost entirely of sticks and pebbles and sand, with possibly a few of the valuable ingredients. You can get preparations that run all the way from eighty per cent ash to twenty. The pennyroyal oil you get on the market may run one hundred per cent on either side. So I have been wondering if we do not possibly need such standards as are important to the health of the country, because they deal with the value of a potent drug, and are made for the purpose of enabling the physician to be certain that what he prescribes is what is put up by the pharmacist. I am inclined to think that we really need a list of standards for all these articles which perhaps none of us would use, but which some people do use, so that at least a man may get his money's worth. No matter if it is a foolish prescription, a worthless prescription, that is something for the physician to settle himself, and not us. He is entitled at any rate to get what he has prescribed.

There has been very little done in a commercial way with these preparations, and I am inclined to think that from the commercial standpoint there should be something done to protect the trade, even though the drug isn't any good and it is really foolish on the part of the physician to use it.

Then there was another point that I would like to speak of, and that is this: We have now a fundamental difference between standards of drugs and standards of foods. In the matter of foods, as long as the product is not deleterious to health and is wholesome—whether the standard is high or whether the standard is low—is going to make relatively little difference to the public health, provided the handling of the product is surrounded with such safeguards that there is an appropriate adjustment of the parts and that the consumer has his choice with reference to the price. In the case of drugs we have an entirely different proposition. It is not a question of adjusting the grade or quality with reference to the price. It is an absolute matter of sometimes life and death. It is an absolute matter of public health. The standards ought to be known.

Take the question of the milk standard. Some localities have a standard of a certain percentage of butter fat, and other localities have different standards not anything like the others, and from the health standpoint it is not vital, whatever the standard may be. It is rather a commercial value. No health question really is involved. On the other hand it makes all the difference in the world in the case of digitalis how it is prepared. It makes all the difference in the world with reference to atropin; it is an absolutely vital matter because it affects the potency of the physician's prescriptions, and we are justified in those cases in not recognizing a product below a fixed standard, even if it is unadulterated. Milk is milk even if it appears to be milk that is not up to a given standard, a definite, general standard, and the matter will adjust itself on price. With reference to drug products you can't distinguish and adjust absolute standards of quality.

Another point I would like to emphasize is the need of doing some work upon methods of handling crude products. Much progress has been made in this line of work in France and also in Germany. The devices they use are carefully guarded, and it is quite evident that we will have to start from the bottom. It is a curious thing that this should be so. It strikes you every time you go through a flour mill that it is possible to do very wonderful things in the purification and separation of materials. In the mills they separate wheat, corn, oats, mustard seed, and all the different seeds, and each comes out in its own way and in its own place, for they have very wonderful devices for separating it.

We need a rather extended study on methods and conditions of crude drugs. Sometimes we separate them by density, throw the material into a salt solution, the drug may float or sink to the bottom. But nobody has actually studied the various ways and nobody has gone to work in this country to devise machinery for separating specific impurities found in a given drug from the drug itself, and that is the line of work we should undertake.

My reason for bringing this question up at this time is that if this work is done it will undoubtedly lead to a better quality of drugs generally, both imported and domestic, because you must realize that just as most of the native drugs in the United States, and also many of the drugs that we get from other parts of the world, are often collected by ignorant and unskilled people. They are collected and brought down by the natives to the port of export, but what the tree and shrub from which it is gathered we do not know in a good many cases. This is true of a great many herbs that we use. (Applause.)

DR. EDWARD KREMERS: Mr. Chairman, I do not desire to prolong this discussion, for I appreciate that the time is needed for something else. Before I dwell on the subject, that I want to say a word or two about, I want to call your attention to the fact that in my paper I brought out or referred to the purification not only of crude drugs that have been collected by ignorant natives, but to make economically possible the cultivation of medicinal plants according to the best scientific methods in our own country. We have resorted to such methods rather than the old method of hand picking. Last winter we turned out 300 pounds of the finest belladonna leaf. We can improve the standard by mechanical means if

we work them out. We can improve the standard as it is now by the pharmacopoeia.

But the special reason why I rose to my feet once more was to touch upon the ideas brought out by the gentleman who has spoken, namely, the difficulty of saying what ought to go into the pharmacopoeia, and how we are to revise the pharmacopoeia. Personally I have no sympathy whatever with the man who dwells on the dignity of the pharmacopoeia. The question of honesty, of right dealing between man and man to me is much more important than the question of professional dignity. (Applause.) I realize the difficulty of deciding what is to go into the first and second and ten per cent extra-pharmacopoeia, but it seems to me we can obviate that difficulty by going ahead and doing things, not by saying what is to go into the pharmacopoeia and revise that book, but to revise the items that need revision. The Bureau of Chemistry through its Food and Drug administration has shown its method of using circulars. If the Food and Drug administration had to wait to issue a book on the food standards, where would we be today? We would be quarreling as much as ever. In order to show you how that may be done the pharmacopoeia experiment stations have issued cards of information every year, on a proprietary standard. We have prepared a number of cards on extra-pharmacopoeia standards which are coming into use. Anybody who wants to know the standard of, say, the French code, of such and such a date, he may have it and be guided thereby. I have brought with me one card which I thought might be of special interest to you because it is a tabulation of the federal and state laws in simple form. They will show you how it is possible to attack this problem. Whether the government attacks it or not is not the point; we can make a public revision of the methods and send out information, and the best of it is that we can revise that revision without having to tear up an entire book. (Applause.)

PRESIDENT FOUST: I desire to say that this is a very interesting subject, and I think the paper of Dr. Kremers requires the going over and the drafting of a resolution, the same to be submitted tomorrow, so that it can be referred to the committee on resolutions, expressing or committing this Association to what is wise and proper in connection with this important subject. I would therefore suggest that Dr. Alsberg and Dr. Kremers before he goes away, also Dr. Puckner, talk this over as to what this resolution should embody, committing this Association to what is right and proper on this subject. I want to thank Dr. Puckner again for coming up here and expressing his views to this Association on this subject.

I want to say at this time that we have with us one of the organizers of this Association and the first president, former Commissioner Blackburn, Dairy and Food Commissioner of the State of Ohio, who will express to us his views of the very early existence of this Association. Dr. Blackburn (applause)

EX-COMMISSIONER BLACKBURN OF OHIO SPEAKS.

MR. J. E. BLACKBURN: Mr. Chairman and Gentlemen: There is nothing that I can think of that gives me more pleasure than to be here and meet you gentlemen and hear your discussions. Someone has said that the eternal question is woman. It is plainly to be seen that the man that expressed that sentiment was not a member of the Dairy and Food Department of any of our states. The eternal question with them from my standpoint has been the question of standards.

You have seen and heard a very able discussion of one of the very, very many phases of this question here, in the last few minutes. Going back to more than twenty years ago the question of standards was just as vital then, and it seems to me more so than it is now. Everything had to be standardized. Every man had a different idea of what that standard should be, judged by his environment or his interest or his study of the question. That one underlying sentiment that appears to be universal throughout the entire food and drug question was responsible for the creation of this organization.

When I came into office in February, 1897, in Ohio, there weren't any two states in the Union from which I could get any information, that had precisely the same laws or the same standards as to purity and wholesomeness of the various products, starting in with milk and running clear down to whiskey. Everybody had a different idea. This organization tackled that question in July, 1897, at Detroit. You all know the result. In those days we had no national law. We had none of the various standards that have since been adopted, and the whole trend, the whole result of this organization has tended toward uniformity of law, uniformity of construction and uniformity of standards. In those days you could hardly go into any store in the United States and get anything that was absolutely pure, while nowadays it is almost impossible in any of the states, where the pure food laws are in force, to get anything that is not pure and wholesome. There may be a slight variation in many of the standards, but it is not serious, it is not great, and the tendency is all in the right direction, toward uniformity.

I have been thinking here in the last few minutes, Mr. Chairman, of the wonderful changes that have occurred in the last twenty years, the wonderful benefits that have been derived from the work of this organization, and I believe it is not stating the case too strongly to say that had it not been for the work of this organization and its influence, the influence of the national administration, the work of which was started by this organization looking to legislation along those lines, I do not believe it would be possible for this country to do what it has done in the last few years in the way of furnishing a food supply for practically the whole civilized world. She has done it and she can do it, and she will keep on doing it, and along lines no serious-minded man will question. The poet has said, "An honest man is the noblest work of God." I contend and believe that the outcome of the efforts of the men who have formed and labored in this organization for the last twenty years has been a collaboration and co-operation of all the noblest and best work that men could do (applause), and the whole world has benefited by it.

I thank you, gentlemen. While there are very few gentlemen I remember having met twenty years ago, I look around and see Brother Flanders and a few others, and I understand Brother Doolittle is here, and I am glad to see you are all interested in the same line of endeavor we started then. I am glad to meet you all collectively, and I shall be glad to meet each and every one of you individually today. I have decided to devote the balance of the day to getting acquainted with the gentlemen who are giving their time and their best thought and effort and the best part of their lives to what I regard as the most important underlying question in the United States today. I thank you (great applause).

PRESIDENT FOUST: We will now take up the Committee on Amendments' report on Constitution and By-Laws. Is Dr. Alsberg ready?

AMENDMENTS TO THE CONSTITUTION PRESENTED AND DISCUSSED.

DR. CARL ALSBERG: Yes, sir. Mr. President, the committee proposed the following amendments to Article 2 which now reads as follows: "The object of this Association is to promote and foster the enactment and enforcement of such legislation as will protect public health and prevent deception in the production, manufacture and sale of dairy and other food products and drugs, and to promote uniformity in such laws" to read as follows:

"The object of this Association is to promote and foster the enactment and enforcement of such legislation as will protect public health and prevent fraud and deception in the production, manufacture and sale of foods and drugs, to promote uniformity in such laws and co-operation in their enforcement."

The only change suggested is the insertion of the word "fraud," which it was thought might be wise to put in to conform with amendments of the various food laws, and the addition of the phrase "and co-operation in their enforcement."

Then it is proposed in Article 3 that it be amended as follows:

"It is further recommended that in Article 3 the words 'and the chairman of sections' be eliminated, in conformity with the action of the Association at a previous annual meeting to abolish the separate sections. It is recommended furthermore, that also similar reference to the sections be deleted wherever such reference is made in the Constitution."

At the last annual meeting the separation of the Association into sections was done away with and it was suggested that the constitution be amended in various articles in which those sections are mentioned, to correspond with the present organization of the Association. I won't read the various individual places where the words "the chairman" or reference to the sections occurs.

"It is recommended that Section 2 of Article 9, Committee on Co-operation, be made to read as follows: 'The duty of the committee shall be to promote co-operation in the enforcement of city, state and federal food and drug laws.'"

The recommendation is to specifically recognize co-operation between the members of this Association and city officials, which is not at present recognized as coming within the scope of the co-operation which this committee is supposed to promote.

"It is recommended that Article 10, Membership, be made to read as follows:

"Section 1. The voting members of the Association shall consist of the Secretary of the United States Department of Agriculture, the Executive Officer or officers of the state laws regulating the sale of drugs, and of dairy and other food products and the Administrator's Officer in charge of city ordinances or laws relating to the sale of drugs and of dairy and other food products, or, in their absence, such officers subordinate to them in the administration of laws regulating the sale of drugs and of dairy and other food products, as they may designate by proper credentials."

"Section 2. All persons connected with the enforcement of city laws regulating the sale of drugs and of dairy and other food products are ex-officio members of the Association and are entitled to all the privileges of the Association except voting and holding office."

It is recommended that Article 11 be amended to read as follows:

"In voting by ballot or otherwise, each state properly represented as provided in Section 1 of Article 10, and the United States Department of Agriculture properly represented as provided therein, shall be entitled to three votes which shall be classed as follows: If no city is represented the entire three votes shall be cast by the delegates representing the state. If a city or cities are represented then two such votes shall be cast by the representatives of the state, and one shall be cast by the representative of the city or cities. The delegates from the cities shall decide how the one vote shall be cast by caucus vote. No state, department or city more than one year in arrears of the dues fixed by the Association shall be entitled to vote except upon permission of the Association by majority vote."

The only essential recommendation—the rest of them are mostly to incorporate changes already adopted by the Association—is in Article 2, inserting the word "fraud" and to specifically mention the promotion of co-operation in the enforcement of laws as one of the objects of the Association. The other important change is in Article 9, to make reference to city food and drug laws so as to indicate the scope of co-operation of the committee on co-operation as well as of the Association. The next important item is specifically recognizing the municipal officials by creating for them a separate class of membership, recognizing them as associate members with the right to do anything that the regular mem-

bers do except voting and holding office. It is a question whether or not the Association wants to do that. The committee felt that the sentiment of the Association at the present time was not to go beyond this particular point. This is merely a report of the committee in reference to whether we should have associate members and what the difference between them and the regular members would be.

The last change recommended makes it possible for a state in arrears to be entitled to vote as though it were in good standing, if the meeting by a majority wishes that it shall exercise that function, the idea being that sometimes conditions arise in administration which makes it impossible legally to pay out of state funds the dues, and there is no way of paying up the arrears except by paying them out of the commissioner's own pocket. Those are the essential points.

PRESIDENT FOUST: You have heard the report of the committee. Under the constitution I presume the recommendations are to go over until some later day, or do they go over a year? What is the present law on that?

DR. CARL L. ALSBERG: "Amendments to this constitution may be made at regular annual meetings of the Association, provided that such amendment is duly presented for consideration at the previous annual meeting, and shall not be adopted except by a two-thirds vote of those present." I take it, Mr. President, they would have to go over until the next annual meeting.

MR. J. S. ABBOTT: Mr. President, I would suggest that if it is possible we at least have a discussion on these amendments at the present time. I do not mean necessarily at this meeting, but in this conference, so that we can all go home with something to think about except the particular thoughts we happened to originate ourselves. It may be that the convention or some member wants to modify or submit or add to this, and I think we should have the privilege of doing it at this time so that it can all be considered at the next annual meeting.

MR. B. L. PURCELL: Mr. President, my impression is at the last meeting of the Association at the suggestion of our Secretary this matter came before it, having in view just such a situation as is presented here now, that this committee be appointed to draft the amendments and present them to the association in the early days of its meeting in order that they might be acted upon at a later session. If you desire to be formal I rise to a point of order and ask you to rule that this question has been brought up before and has been before this body at its last annual meeting, and it will be perfectly proper and within the by-laws to act on the proposed amendments at a later session of this convention.

MR. R. E. ROSE: Mr. President, I wish to confirm what the commissioner from Virginia has said. This commissioner was appointed to prepare resolutions in regard to amendments at this meeting. I think the minutes will bear me out in my contention.

SECRETARY NEWMAN: I remember it very well. It was to cover exactly what has happened that we might have action at this convention by considering that the matter had been brought up at Atlantic City.

I would like to ask the committee if they gave any consideration in regard to the municipalities, that some municipalities should be entitled to be more than associate members. I have in mind that when a city gets a population larger than the population of the smallest state it shall be entitled to a voting privilege.

DR. CARL L. ALSBERG: The committee wanted to be conservative in its recommendations, and felt that the best way to get discussion was to be conservative in its recommendation. We did discuss two possibilities as I recall it. One was this possibility and the other one was limiting the membership to cities of a certain size. We didn't get to the point of discussing exactly what the first would be. We felt you might prefer that a city of a certain size be entitled to legal membership the same as a state, but we wanted to make a conservative report.

MR. B. L. PURCELL: Mr. Chairman, I ask a ruling on a point of order.

PRESIDENT FOUST: I will decide the point well taken by the Commissioner from Virginia, that these amendments were properly brought up at the Atlantic City Convention a year ago, and we will fix tomorrow morning at nine o'clock, the first order of business, as the hour for acting on the committee's report and the adoption of these amendments or their rejection or amendment.

DR. CARL L. ALSBERG: May I say one word, Mr. Chairman? The committee felt that the associate member should not be required to pay the same dues as the regular members, that is dues which would practically be only enough to cover the cost of furnishing him with the proceedings.

MR. J. S. ABBOTT: Mr. Chairman, I am in favor of discussing this and disposing of it while it is fresh in our minds, rather than to defer it till tomorrow morning.

PRESIDENT FOUST: My reason for putting it over until tomorrow morning was to permit the members present to talk it over among themselves, and that possibly by tomorrow morning they would understand each other better, and that we could dispose of this in one-third of the time we could dispose of it now. According to my ruling it has been made the first order of business in the morning. We will then have plenty of time to take it up. Another thing, will we have to act on these by ballot or by viva voce vote?

MR. B. L. PURCELL: The constitution provides for the vote by ballot, I think.

MR. G. L. FLANDERS: Mr. President, I would like to ask if the committee's report would be covered by your ruling on Mr. Purcell's point of order, or could the report be amended so that the wording in section 1 could be changed somewhat, to make it a little clearer, and still be taken up at this session?

PRESIDENT FOUST: I anticipate there will be amendments and changes made when we come to adopt them.

MR. G. L. FLANDERS: Suppose there are other sections to be amended?

PRESIDENT FOUST: We can include them. The further consideration of the report of this committee will go over until 9 o'clock tomorrow morning promptly. It will be the first order of business.

Has the committee on "Definitions and Standards" a report? Dr. Ladd is not present.

MR. J. S. ABBOTT: They have a report.

PRESIDENT FOUST: I will fix that for the first paper tomorrow morning after we are through with the report of the committee on revision of the constitution. I consider this a very important report and I do not want it to be slighted in any particular, as it was a year ago at Atlantic City.

If there is nothing further the further consideration of today's program will be taken up tomorrow morning in regular order. We stand adjourned till 9 o'clock tomorrow morning.

The meeting was adjourned at 11:35 for the trip to the Great Lakes Naval Training Station.

FOURTH SESSION.

Thursday, August 29, 9:00 A. M.

PRESIDENT FOUST: Before we take up the first order of business I will ask the Secretary if he has any statements to make.

(Announcements by the Secretary.)

PRESIDENT FOUST: The first order of business is the report of the committee on amendments to the constitution and by-laws. Before we take this up I think we had better, as far as possible, adhere to some kind of a rule that no one speak more than three minutes, in order to expedite the work of adopting these amendments. A committee was appointed at Atlantic City and they made their report yesterday, and we let the matter go over until this morning at nine

o'clock to take up the recommendations and act on them. We will now take up the first amendment.

MR. JAMES SORENSON: I would like to suggest, in view of the fact that some of the members here this morning were not present yesterday, that Dr. Alsberg be asked to read the proposed amendments to the constitution. They are very short.

PRESIDENT FOUST: I would suggest that we just read the first one and consider it. We would have to do that anyhow.

DR. CARL L. ALSBERG: That is what has been suggested, that I read them one by one, and they be disposed of one by one.

CONSTITUTION AMENDED.

PRESIDENT FOUST: We will take up the first amendment. (Read.)

PRESIDENT FOUST: I will ask the first vice-president to take the chair.

(Mr. A. M. C. Soule, first vice-president, acted as Chairman of the meeting.)

MR. R. E. ROSE: Mr. Chairman, I move the adoption of the amendment.

MR. GUY G. FRARY: I second that motion.

CHAIRMAN SOULE: Gentlemen, you have heard the motion made to accept the amendment as reported by the secretary. It has been moved by Commissioner Purcell and seconded by Commissioner Frary that the amendment to the constitution, as read by your Secretary, be adopted.

(The motion was unanimously carried.)

MR. B. L. PURCELL: These amendments must be adopted constitutionally, and a two-thirds vote is required. It will be necessary to have that number.

CHAIRMAN SOULE: If I am not in error, gentlemen, I would like to know if there isn't a provision in the constitution that amendments to the constitution should be by ballot.

DR. CARL L. ALSBERG: I have the constitution here, suppose I read what it says about amending (reads). (Art. XV.)

SECRETARY NEWMAN: Isn't there another section there that speaks generally about voting?

DR. CARL L. ALSBERG: Yes: Article XI (reads). Apparently these amendments must be passed by states, but whether we ballot or call the roll isn't settled yet.

MR. F. A. JACKSON: Mr. President, I would suggest that we go along in this way by motion, and then to be doubly sure, after we get to the end, we can adopt all the amendments by ballot if you desire to do it that way.

MR. G. L. FLANDERS: Mr. President, I suggest you submit it to a two-thirds vote. We can vote on them separately. I move that we take a rising vote on this question.

DR. WM. FREAR: There is a motion before the house, Mr. Chairman, but I think we should follow Mr. Flanders' suggestion.

CHAIRMAN SOULE: Is that motion seconded?

MR. R. E. ROSE: Seconded.

CHAIRMAN SOULE: As many as are in favor of adopting the amendment recommended by the secretary of your committee appointed will please rise (15 arose); those opposed (none). The motion has been carried and is so declared. The Secretary will record it.

MR. G. L. FLANDERS: Mr. Chairman, at this time I move you that the Secretary be instructed to print copies of the constitution and distribute to each member here present.

DR. E. L. BARNHOUSE: I second that.

CHAIRMAN SOULE: Gentlemen, you have heard the motion made by Mr. Flanders, seconded by Commissioner Barnhouse of Missouri.

MR. G. L. FLANDERS: Mr. Chairman, my motion is this, that the Secretary be instructed to have printed enough copies of the constitution and by-laws to give two copies to each member attending this meeting, and a sufficient number for a like representation next year.

CHAIRMAN SOULE: Gentlemen, you have heard the motion.

(Seconded by Mr. Barnhouse.)

(The motion was put.)

SECRETARY NEWMAN: I want to say in reply to that, Mr.

President, we can carry that along very well if it is your desire. That has been done in the past. People get these copies and leave them at home. I think members should impress it upon themselves to bring their copies of the constitution with them.

MR. G. L. FLANDERS: Did I understand you to say that the Secretary had them printed?

SECRETARY NEWMAN: Yes. They were also printed in the copies of the report.

MR. G. L. FLANDERS: The report, Mr. President, is rather a cumbersome thing to bring with you when you want to refer to the constitution.

DR. CARL L. ALSBERG: I would suggest that the thing to do would be not to send it to members unless the members ask for it. Have a few on the table here at the meeting, in charge of the Secretary, where, if a matter dealing with the constitution came up they could be distributed. If there are copies enough to go around I think that would be a good suggestion.

DR. WILLIAM FREAR: Mr. Chairman, let us leave it as Mr. Flanders made the motion, to send two copies to each member and leave a supply on hand.

CHAIRMAN SOULE: What is your pleasure, gentlemen? You have heard the motion made by Commissioner Flanders, seconded by Mr. Barnhouse, and the suggestion of Dr. Alsberg. Shall we abide by the motion or the amendment?

DR. WILLIAM FREAR: The question is on the amendment.

MR. G. L. FLANDERS: Mr. Chairman, it is my understanding that the second idea was not put in the form of a motion, it was just a suggestion.

MR. F. A. JACKSON: Mr. Chairman, I would suggest that we go right along and, instead of mailing them out, the secretary bring them here and have them on the desk. That was only a suggestion of Mr. Flanders', so that the first motion has been voted on and we are ready to take up the next recommendation of the committee.

CHAIRMAN SOULE: Let us hear the next.

(Read by Dr. Alsberg.)

Is it your judgment that this amendment is required? Last year we amended the constitution to that effect when we abolished the two sections. What is your ruling on that?

MR. R. E. ROSE: We did not amend it. The only necessary amendment is to strike out all reference to the two sections and that we only have one meeting.

CHAIRMAN SOULE: Of course, I am willing to abide by the sense of the convention, but it seems as if there was a clause in our constitution providing for the existence of sectional meetings.

MR. B. L. PURCELL: I suggest that each article of the constitution, beginning with No. 1, be read and voted on separately and then when we get through with them all we can leave such matters to the chairman.

DR. CARL L. ALSBERG: I don't quite get your recommendation. Do you mean the constitution as it stands now?

MR. B. L. PURCELL: No, as it is to be amended.

DR. CARL L. ALSBERG: Where reference to the section occurs that would have to be amended.

CHAIRMAN SOULE: It has been moved by Commissioner Rose of Florida, seconded by Commissioner Jackson of Rhode Island, that you accept the report of your secretary as an amendment to the constitution.

DR. WILLIAM FREAR: Mr. Chairman, my motion was that we accept the report of the committee on the amendment of Section 1 of Article 5, and also on the recommendation on the amendment of Article 3, and all other places in the constitution where reference is made to sections or chairmen of sections, to delete from the constitution all reference to sections and section chairmen.

SECRETARY NEWMAN: Mr. President, it is very important that when the report comes out it is accurate, and the stenographer cannot get it unless you enunciate distinctly and slowly, and then we want time to give the names on the motions.

CHAIRMAN SOULE: Gentlemen, you have heard the motion.

(Motion put by chair: carried.)

DR. CARL L. ALSBERG: The next is an amendment to Art. 9, Section 2 (read).

A MEMBER: What committee is that?

DR. CARL L. ALSBERG: The committee on co-operation.

MR. R. E. ROSE: I move its adoption.

MR. F. A. JACKSON: Second the motion.

(Motion put and carried.)

DR. CARL L. ALSBERG: The next amendment recommended, Mr. Chairman, deals with Article 10, Membership (read).

MR. F. A. JACKSON: Gentlemen, this is rather an important matter.

SECRETARY NEWMAN: Mr. Chairman, is this the amendment that provides for the co-operation of cities?

DR. CARL L. ALSBERG: Yes.

SECRETARY NEWMAN: Why not in place of saying "cities" say "all other bodies that the Association recognizes." We may for instance have people or attempt to get bodies to co-operate with us, other than municipal officials. For instance, as we discussed yesterday, suppose there are departments of the state or federal government later on to take care of increased production and conservation. We would like very much to have them affiliate with us and you would have to again amend the constitution to take them in. If it includes all bodies the Association recognizes as eligible either for voting or associate privileges, doesn't that cover it?

MR. J. S. ABBOTT: Mr. Chairman, I suppose this is open for discussion. I want to discuss a recommendation for the committee on co-operation that has a bearing on this particular amendment. The committee on co-operation a day or two ago recommended that the constitution be amended making all cities, state and federal food and drug control officials eligible to membership. This recommendation has been made from year to year for a number of years and has never been discussed and therefore never acted upon by this association. It was agreed the other day when that recommendation was made that a discussion of it would go over until a report was received from the committee on the constitution, which would have that under consideration, and it is to that recommendation that I want to address my remarks. This association adopted the other day a recommendation of the committee on co-operation, to the effect that we will encourage the organization of smaller associations or the creation of smaller associations, consisting of those groups of states that have a common product. We also went on record the other day as encouraging state officials to form organizations within their respective states between the state organizations and the local organizations, municipal and county. Of course, there are only a few county organizations interested in our problems, but there are some scattered throughout the country. In fact, there are a great many county organizations that have to do with some of the very things that we have to do with, particularly the net weight amendments of our laws.

This Association has also gone on record to the effect that it is desirable to establish and promote co-operation not only between the state organizations but with city organizations and municipal organizations, or other organizations that are engaged in the work that we are engaged in. This Association is called the Association of American Dairy, Food and Drug Officials. "American" is a pretty big word. It is generic. The words "Dairy Food and Drug Officials" is a pretty broad term. This Association is as a matter of fact and always has been not an association of officials but an association of food and drug commissioners of the states and the Secretary of Agriculture. In other words, we are at the present time misbranded, in my judgment.

Now, gentlemen, if it is desirable—and there is no question about that—that co-operation in the enforcement of dairy food and drug laws extend through and to every agency that exists in this country for the enforcement of food and drug laws, the committee on co-operation in this convention and at previous conventions has believed and does believe that there should be an association in this country to which they could go and become members and take part in the discussion and solution of problems with which dairy, food and

drug officials have to deal. The co-operation committee still believes that it is desirable that there be a general association, a national association, in which the inspectors, the chemists, the administrative officers, whether cities or states, of federal government, of counties that have to do with food and drug control, should be eligible to membership. Just why it is that we should at this time put ourselves in the attitude of limiting it only to the administrative officers is something that your committee on co-operation can't understand. If there are good reasons for it we should like to hear them, and if it be the will of this organization that it be confined to administration officials solely, all well and good, and if that be the attitude of this body then the committee on co-operation and your future committees on co-operation will have to attack the problem of co-operation in America on an entirely different basis, from an entirely different angle.

Now, gentlemen, every organization that is worthy the name of an organization for food or drug or dairy control consists of three pretty distinct, separate parts. One is the administrative officer, another is the analyst division, composed of chemists, bacteriologists, microscopists, and so on; the third division is the division of inspection per se, or field work or field inspection. There are three important classifications of these agencies in themselves, for the enforcement of food and drug laws in America. One is the federal government, that supplements the state government. Another is the state government or organizations that supplement the local government or the municipalities. The other classification is the municipal or county or smaller unit of classification. As the commissioner from Maryland clearly pointed out to you yesterday, each of these three classifications of agencies for the enforcement of food and drug laws has a very particular and definite function to perform. If we do not know what those functions are, it is high time we were finding out what they are. Especially your committee on co-operation has got to consider what they are and what their functions are, otherwise how can we recommend any basis for co-operation along such agencies? If it is necessary and advisable and desirable—and no man questions but that it is—that these three classes of organization in America co-ordinate their work, put their shoulders to the wheel, and give the public the protection it deserves, and the legitimate manufacturing trade the protection it deserves in the enforcement of food and drug legislation; if it be desirable that these three classes of organizations form a co-operative organization for the enforcement of laws and the development of uniformity of procedure and so forth, and if it be desirable that each class be composed of analysts, inspectors, and administrative officials, and if it be desirable that there be a national organization, why is it that it is desirable or why should it be desirable that there be three separate, distinct organizations or associations in which these officials may come together and discuss these various problems? Will the inspectors of America engaged in food and drug control work have to get out and form an association of inspectors and make a national organization out of it separate and apart from your administrative officers? Will the analysts have to get out and form an association of themselves for the discussion of the problems that relate to analytical work, and that there be an organization like this, of the administrative officers only, and another national organization of analysts only, and another organization of inspectors only? If not, then the inspectors and analysts are out of the question except that it be as has been recommended, that they be in the matter of associate members entitled to all the privileges of the association except that of voting. The trade is entitled to that much, they always have been recognized that way, at least. In practice they have been. That cannot be gainsaid. Now why can't we as food and drug control officials of each class of single organization, and of the three classifications of city, state and federal work form a national association here for the discussion of problems relating to our work, or is it more important that this association be a vot-

ing association than it is that it be a working association for the dissemination of information, data, material, and so on, that we need in the enforcement of the food and drug law. It has been in the past, as you know, too much of a voting proposition. The voting has been more important than the work of this organization. We have even attempted to settle problems of physiological chemistry in this association by voting, to our shame. What other things do we have to do with? What does it matter about the voting? As stated in the admirable paper read yesterday by Dr. Kremers, when we get the facts and the data they can be threshed out and acted upon in the proper way. What difference would it make as to a vote on the fundamental control of the problem of soft drinks, that some of us have been working on for two or three years, and the important principles we should consider in the solution of that subject as food and drug officials? Is it more important that we vote or that we have got the fundamental principles on which to act when we go back home to work? In the discussion of the problem before this convention we are doing it as man to man, we are not doing it as officials, subordinate or insubordinate. These are our problems that we discuss, and so long as any problem is under discussion my chief and you men as chiefs will permit the under man officially to express his opinion. As long as the problem is under discussion the subordinate is discussing the problem with his chief as man to man and not as a subordinate. Whenever the problem has been settled, that settles it for the subordinate officials and he puts his shoulder to the wheel and helps carry it out, and it is in that spirit and in that way that we have attempted here to give you our views in respect to a national organization.

I don't see why this organization shouldn't take in the membership of the bodies to which I have referred, I do not see why we shouldn't have the greatest national organization on earth for the discussion and solution and control of problems relating to food and drug control. We know the federal organization in America is the strongest of any federal organization in the world. You know the state organizations in America are among the strongest of their kind of any civilized country in the world, but you also know that the municipal control of foods and distribution of foods in America is the weakest power of any civilized country in the world that has undertaken the solution of this problem. The cities are not yet doing much in the line of food and drug control. It is limited to dairy problems largely, or meat problems, but the time will come in America when they will tackle the food problem as we have tackled it, according to the function of our local food control. They need but developing, they should be developed. Their ordinances ought to be revised and made to cover substantially what the state and federal laws already cover, relating to the control of food and it is in that spirit that we really connect up with these local organizations and help them all we can.

(President Foust resumed the Chair.)

PRESIDENT FOUST: If you will just pardon me at this time, I am convinced we will expedite matters if Mr. Abbott will just appear with this committee to revise the constitution and by-laws and that we continue further consideration of these recommendations until tomorrow morning at 9 o'clock, so that we can go along with the other matters and Mr. Abbott can meet with the committee and come in here tomorrow morning and in this way we will save a lot of time.

MR. J. S. ABBOTT: I want to make a motion, Mr. Chairman, that all city, state and federal food and drug officials of America be made eligible to membership under this constitution.

SECRETARY NEWMAN: What kind of membership—associate?

MR. ABBOTT: Membership—that means membership, and the question of what sort of a vote that is or how the vote shall be recommended doesn't make any difference. It doesn't come under the recommendation of the committee on co-

operation. I am simply repeating their recommendations. We recommend that all city, state and federal food and drug control officials be made members of this association, that the constitution be changed accordingly. I make that motion this morning.

SECRETARY NEWMAN: Is that an amendment?

MR. J. S. ABBOTT: Not an amendment, no. That is the recommendation of the committee on co-operation.

SECRETARY NEWMAN: Didn't Dr. Alsberg have an amendment up that we were discussing, that you are speaking of?

DR. WILLIAM FREAR: This is just the amendment that Dr. Alsberg proposes, the addition of the word city, in there, with federal and state.

MR. J. S. ABBOTT: That recommendation was that they be made associate members.

DR. WILLIAM FREAR: I mean in Article 9. It adds there "city."

DR. CARL L. ALSBERG: Let me read it, Article 9, Section 2: (read). It has been adopted so far as it can be in a preliminary way. I don't think Mr. Abbott has in mind that that entirely covers it. What Mr. Abbott means is, he thinks the city and other officials should all be on the same plane, entitled to the same kind of membership and the same privileges, the same voting privileges as the present membership.

DR. WILLIAM FREAR: Mr. Chairman, I move the adoption of the amendment to Article 9, Section 2.

PRESIDENT FOUST: It has been amended.

MR. J. S. ABBOTT: It has been in reference to co-operation, this is another matter.

DR. WILLIAM FREAR: Let us read Article 10, then.

PRESIDENT FOUST: Yes. (Read.)

DR. WILLIAM FREAR: Mr. Chairman, I move that the recommendation of the committee on amendment of constitution and by-laws as it relates to Article 10 be amended to strike out the word "associate" and as so amended be adopted.

MR. G. L. FLANDERS: Mr. Chairman, you provide in the constitution at present that a state may have three votes, and its delegates present may divide the votes as they see fit. If you are going to bring in the cities without providing what their functions shall be, by giving them a vote, cities can come in and possibly out-vote the state entirely. You have no provision how they shall vote in the constitution.

Just one word on what Mr. Abbott has said. He started out by criticising the title of this association, saying it was long, it was too broad, it was an American Association. Before he gets through he says it ought to be broad enough to take Canada in. I would like to know how a national association can take Canada in, because it is another nation.

MR. J. S. ABBOTT: May I interrupt?

MR. G. L. FLANDERS: Yes.

MR. J. S. ABBOTT: I think that is a quibble on words. I did not use the word "national" advisedly. If we are going to confine it to the United States of course it would be national, city, state and federal. On the windup of my argument I did make the suggestion that I thought even Canadian people should be brought in, and I think so yet. I am strong for the name American Dairy Food and Drug Officials, without any misbranding at all.

MR. G. L. FLANDERS: Mr. Chairman, take the statement Mr. Abbott made; he says he didn't do it advisedly. It puts me in an embarrassing position. I don't know how much he did say advisedly this morning. If we are going to make provision for these people in the cities with all their delegates, you must make provision for how they are going to use the vote, if you are going to be consistent about the matter. You ask that they shall be free organizations, the chemists, inspectors, and administrative officials, to settle their questions. I would answer that by saying that I don't think administrative officials have anything to do with the chemical side of the question. That is purely a scientific proposition of the chemists themselves. Each delegate can come here for his administrative officer. I have done that, I have come here for 22 years, helped form the organiza-

tion. I have not been the administrative officer but I have been a delegate nearly every year for that purpose. I am not seeking to assert a position, the position of my superior officer. If the superior officer wants to discuss the problem that confronts him at home, then let him bring his subordinates.

MR. A. M. G. SOULE: Mr. President, I think we all remember last year at Atlantic City this subject came up for discussion. At that time it was the sense of the convention that we appoint a committee. That committee was appointed. They have given careful consideration to this matter and have made their recommendations. We have entrusted to this committee the representation of this organization and they have made their report, and it does seem to me fitting that we abide by the report and the recommendation of the committee.

PRESIDENT FOUST: At this time I would like to postpone further consideration of this report until 11 o'clock and permit you gentlemen to go with Dr. Alsberg, and I think we can expedite matters. Is there any objection to this?

MR. J. S. ABBOTT: Mr. Chairman, I am not speaking of the report of the committee on constitution, I am speaking of the report on recommendations of the committee on co-operation, and it was by common consent that this recommendation was deferred for discussion and for action until this constitution committee made their report. I do not see why a vote right now cannot be taken, or further discussion of the recommendation. The recommendation does not say how many votes a city shall have or shall not have, the recommendation is that the constitution be amended so as to make city, state and federal food and drug control officials of America eligible to membership in this association. After that is acted upon then the committee on constitution or this body can determine on what basis they should have membership.

PRESIDENT FOUST: You have heard Mr. Abbott's report on recommendation. (Question put by chair; carried.)

DR. CARL L. ALSBERG: I would like to have some instructions, Mr. Chairman, in reference to this committee. Do I understand that we are to revise our amendments to meet this motion?

PRESIDENT FOUST: That is the idea.

DR. CARL L. ALSBERG: As well as of course a revision of the special article that has to deal with voting, also.

PRESIDENT FOUST: Yes.

DR. CARL L. ALSBERG: That it amounts to referring this particular recommendation back to the committee for further consideration, is that right?

PRESIDENT FOUST: I think so.

DR. FRED C. BLANCK: Mr. President, the recommendation of the committee on co-operation on this particular point and on which the association has just expressed its opinion, makes absolutely no qualification regarding the status of the membership of the city officials. Section 3 proposed by the committee on revision to amend our constitution, provides for a form of membership—"except the privilege of voting and holding office." I would move you, therefore, that in order to carry out the full significance of the recommendation of the committee on co-operation, which the Association has just adopted, that the committee on revision be instructed to delete the last words of their proposed Section 3, namely "without the privilege of voting or holding office."

SECRETARY NEWMAN: Does that mean that the city officials just provided for will have equal voting privilege with the federal and state food officials?

DR. WILLIAM FREAR: It hasn't been acted on yet.

SECRETARY NEWMAN: I would like to have him answer the question, anyway. Does that provide that the city officials referred to would have an equal voting privilege with the state and federal officials?

DR. FRED C. BLANCK: Yes.

PRESIDENT FOUST: The motion isn't seconded yet. What is the next, Dr. Alsberg?

DR. CARL L. ALSBERG: The next is a very important amendment to Article 11 (read). It is proposed to amend

by adding an exception to the last sentence so that the sentence would read "no state or department more than one year in arrears of the dues fixed by the Association shall be entitled to vote, except upon permission of the Association by a majority vote." The idea being that occasions arise when no provision is made by the legislature or governor for the payment of dues for a particular year, and that the state shall not be penalized necessarily by virtue of such failure to provide for the payment of dues, if the Association thinks conditions are such as to warrant the state commissioner in having a vote.

PRESIDENT FOUST: This is a fair amendment, what is your pleasure?

MR. R. E. ROSE: Mr. President, as a member of the committee on credentials, on several occasions that problem has arisen. On several occasions states were in arrears who had not been represented at all, and the man who came with his proper credentials at that time was called upon to pay back dues, and it wasn't fair to him. It was referred to the convention and the convention acknowledged him and his annual dues for that particular time. As stated by Dr. Alsberg, there were several occasions where states were not represented for many years for some reasons, for want of appropriations or funds. I move the adoption of the amendment.

SECRETARY NEWMAN: I second the motion.

PRESIDENT FOUST: You have heard the motion, are you ready for the question?

MR. G. L. FLANDERS: I was going to say, our present secretary when he came into office in this state found his state in arrears six years. His predecessor had been president of this organization and he couldn't vote.

One word I want to say in particular bearing on this resolution. We are making provisions relative to restricting the vote of the states here. There is no provision about the cities going to be represented paying any dues, or if they do not pay any dues are we going to give them the privileges that members here now don't have?

DR. CARL L. ALSBERG: I assume that would be referred back to the committee and that the committee would have to consider it in bringing in the revised amendments, at least I would like to know whether I am correct in interpreting Mr. Abbott's motion in that direction, that we would have to go over the whole thing and make revision accordingly.

MR. G. L. FLANDERS: The reason I raised that question is that if the body wants to do that, we can so understand before we take the matter up.

PRESIDENT FOUST: You have heard this motion which has been seconded, to adopt the recommendation.

MR. B. L. PURCELL: Mr. President, it is suggested that the addition should be "officials or other organizations."

DR. CARL L. ALSBERG: Then I say, Mr. Flanders and Mr. Jackson, that the committee accepts that suggestion.

MR. G. L. FLANDERS: Mr. President, I accept that suggestion.

MR. J. S. ABBOTT: It strikes me if this recommendation should go through as it is now that it would necessitate changing a good many of the powers attached and connected up directly with that, and that the committee on constitution will make their entire report conform to that principle.

PRESIDENT FOUST: Is there a motion made that the committee make such changes as to bring it in harmony with the original motion?

SECRETARY NEWMAN: I make such a motion.

DR. WILLIAM FREAR: I second the motion.

MR. B. L. PURCELL: I think that ought to be acted on separately.

PRESIDENT FOUST: We will. But the changes can be made before we call it up to act on it.

MR. B. L. PURCELL: Subject to other changes then. The committee has accepted this amendment and we could act on it as a whole.

DR. CARL L. ALSBERG: There are really two things before us, I believe. One is this amendment which no one as far as I know has moved to adopt—the back dues.

PRESIDENT FOUST: I think we had better vote on that. That motion was made by the secretary and seconded.

DR. CARL L. ALSBERG: That comes first, and Mr. Abbott's would have to follow that.

PRESIDENT FOUST: You have heard the motion to adopt the recommendation. (Motion put by chairman; carried.) The committee then accepts the suggestion of Commissioner Purcell, so that we will take up the next section.

DR. CARL L. ALSBERG: There is no further amendment proposed by the committee.

PRESIDENT FOUST: Now, here is a question: in order to make this legal, might it not be better to vote on all the recommendations as amended and suggested, by ballot?

DR. CARL L. ALSBERG: Mr. President, it seems to me the most important amendment has been referred back to the committee with certain instructions, and I would suggest that it would be wise to defer the question of passing by a two-thirds majority on this whole thing until the amended recommendations are presented to the Association.

PRESIDENT FOUST: We will then defer further consideration of this matter until the committee comes in with their revised recommendations, at which time they will be gone over and acted upon.

DR. WILLIAM FREAR: Mr. Chairman, may I suggest that in order that the record may show this matter in the right light in the stenographic report, that Mr. Rose moved to adopt the amendment to Section 11. He did not make that motion.

MR. A. M. G. SOULE: There was a motion before us on the adoption of this important amendment.

PRESIDENT FOUST: We will consider it as a motion. It was made and seconded.

MR. G. L. FLANDERS: I am under the impression we are making no mistake—I think I came in thinking the report had been read as a whole, and I made a motion to adopt it as a whole. I move you that we reconsider the vote.

DR. WILLIAM FREAR: That is not so. We voted on the amendment to the first article only.

DR. CARL L. ALSBERG: Might I ask Mr. Flanders to repeat his motion. I didn't quite catch it.

MR. G. L. FLANDERS: I came in late and supposed you were considering the matter as a whole, and I moved that we take a rising vote on adopting the whole of the amendments, and you took the vote and I supposed that was what you were taking it on. As long as we are not going to consider the whole I wanted to move a reconsideration.

MR. A. M. G. SOULE: The first vote was on the recommendation and then on the amendment. There is a motion before us, made and seconded to accept the recommendation as a whole.

PRESIDENT FOUST: I think we will just pass along until the committee comes in with some changes that are necessary, at which time we will call a roll of states, either by ballot or by viva voce vote. For the present we will take up another part of the program. I will ask the committee to get together and report tomorrow morning, the first order of business at 9 o'clock.

DR. CARL L. ALSBERG: Might I suggest, Mr. President, that you make the further suggestion that anybody else besides Mr. Abbott and Mr. Flanders may make suggestions?

PRESIDENT FOUST: Thank you. They will be glad to have you do so, and when they come in tomorrow morning at 9 o'clock we will be ready to go right along with it. A resolution will be read by the secretary.

SECRETARY NEWMAN: The following resolution has been offered:

Resolved, That it is the sense of the Association of American Dairy, Food and Drug Officials that membership in the Joint Committee on Definitions and Standards shall be restricted to those who have no financial interest directly or indirectly in any establishment where food or drug products are manufactured, prepared or sold.

JAMES FOUST,
Pennsylvania.

PRESIDENT FOUST: This resolution will be referred to the

committee. We will now take up the second item on today's program. I want to say for the benefit of Dr. Ladd, that the report of the committee of which he is chairman, the Committee on Definitions and Standards, we will take up a little later in the day. "The War's Effect on the Dairy Industry," by Dean Eugene Davenport, University of Illinois. (Applause.)

THE WAR'S EFFECT ON THE DAIRY INDUSTRY.

BY DEAN EUGENE DAVENPORT,
University of Illinois.

MR. PRESIDENT AND GENTLEMEN:

I certainly appreciate the honor of being invited to speak before a body of officials upon so important a subject as "The Effect of the War Upon the Dairy Industry."

I have the decided feeling that some man in active dairy business could have been more successful in outlining what these effects are likely to be. However, as no man is competent to do more than prophesy at this juncture, and as no man can cover more than a portion of so large a field, I am more than glad to outline for your consideration some of the influences likely to be exerted by the war with more or less permanent effect on the dairy industry.

1. *The Value of Milk as Food.* Say what we please, the world has never regarded milk as a real and staple food except for babies and invalids; whereas, it is the cheapest of all our animal foods and can be consumed in large quantities, both directly and indirectly, as milk, butter, cheese, cream, buttermilk, koumiss, ice cream, condensed milk, milk powder—in brief in more different forms than any other standard food except flour. Not only that, but in any form, milk and its derivatives are as standard as flour or meat, and for adults as well as children. The world little realizes the proportion of its diet that actually comes from the cow, but this realization is almost certain to deepen as the war goes on.

2. *The Indispensability of Milk.* Not only will the food value of milk become better understood, but its indispensability will become better established every day as the role of the vitamins comes to be better understood. I believe we are now seeing the last of the foolishness of economizing on the use of milk, while indulging freely in substitutes that are not only more costly but less nutritious than the real article.

3. *The Cost of City Milk.* Most of us in this new country have been brought up in the habit of consuming milk directly from the cow, or at most of running over to the neighbors with our little pail morning and evening after the family supply. Under these conditions milk has been cheap, so cheap as hardly to count in the expense budget. Only recently has the cost of city delivery begun to attract attention, and still more recently the increased expense of production, by reason of better housing, better care, and more costly feed. All these elements of expense will be exaggerated by the war, and the public will come rapidly to understand why it is that milk costs more than it did on the farm in pioneer times when the cows ran in the road and fed on the public domain.

4. *A Just Compensation.* With this knowledge will come a willingness to agree to a just compensation both to the producer and to the distributor, and while differences will need to be adjusted from time to time, the absurd milk war of last year will hardly be repeated, particularly as the actual elements of cost are now so well understood by reason of the cost-accounting methods introduced by the different experiment stations.

5. *The Good Cow.* With the increasing cost of production, the inherent value of the good cow will be made to stand out as never before. With cheap food we esteemed her as a heavy producer, but with costly feed she will be

recognized as an economical producer, which is still more to the point.

6. *The Folly of Forced Feeding.* The law of diminishing returns applies to all feeding operations as well as to mechanical power. By this economists understand that beyond a certain point additions to expense, as feed, fertilizer, or other outlay, are not followed by equal additions to results. We have been taught that the cow requires a certain amount of feed for maintenance and that all above that amount goes into milk. But we now know that as she nears her full capacity the later pounds are made at an extreme outlay of feed. With this knowledge we shall crowd some of our cows less heavily.

7. *Economize on Costly Boughten Feed.* The only cow feed that should be bought is that which is procured as a by-product of our milling operations. It is ruinous to make milk from boughten feed that could be raised on the farm, and it is equally ruinous to so compete for the limited supply of mill feeds as to force the price to an abnormal figure, as was done last winter. When a by-product, because of the demand, becomes more costly than standard farm-raised feeds equally good for milk production, the time has come to call a halt in the demand, because feeds are valuable for milk production, not in proportion to their cost but in proportion to their nutrients.

8. *Tiding Over Difficulties.* The lesson of last winter will not soon be forgotten, for by it we learned that the best way to tide over a temporary difficulty is by shortening the feed, especially that portion which is boughten. The yield shortens, too, to be sure, but that is often necessary when the public is fighting milk, and it is far better to cut down temporarily in the amount of feed in the whole herd than to sell a portion of the herd and go on stuffing the remainder with more feed than is profitable.

9. *Dairying a Part of Farming.* That dairying is a part of real farming and not a highly specialized and distinct industry, is being demonstrated by war conditions, for, by as much as the dairyman has supported his herd by feed that he could have produced but did not, by that much he has failed. All cost-accounting studies show that a dairy in order to succeed must be a part of the farm and not an independent institution like a shoe factory.

10. *War Will Stabilize Dairying.* War conditions simply intensify economic strain and emphasize demands. This will operate rapidly to standardize both the product and the methods of production, all of which will greatly stabilize the business. The old fight with oleo will be settled along rational lines. The value and the cost of milk will become recognized and dairying will rapidly emerge from among the hazardous enterprises where it of necessity lingers under new country conditions.

11. *A World Market.* Almost of necessity we shall hold a large share of the world market which we gain by the war. I cannot share the common feeling that we shall have a large and continuous call for breeding stock after the war, though at first and for a time there is sure to be a sharp and profitable demand. The farms will become restocked very rapidly and our active market for breeders, it seems to me, will soon dwindle. Not so for condensed milk, butter, cheese, and, I hope, also milk powder, which I have found in camping to be a cheap and desirable product.

12. *The Veal Calf.* The war ought to help greatly in establishing the legitimacy of the veal calf business. It is the unthinking consumer and the soap-box politician that make the sweeping indictment against veal. These will be largely educated or otherwise induced to shut up, for a large proportion of the young of a dairy herd ought never to be raised to maturity. This economic fact is likely to percolate rapidly now, as well as the corresponding fact that an animal never makes meat so rapidly or so cheaply as when it is young.

These are some of the more obvious results the war is likely to bring to the dairy business. Others will be added which do not now seem so clear, but of one large fact we may be certain—the older the country, the more established will

be the dairy business, and our country is taking on age just now with astonishing rapidity.

(Applause.)

PRESIDENT FOUST: Thank you very much. This discussion will be opened by Professor Oscar Erf, of the Ohio State University.

DISCUSSION OF THE DAIRY INDUSTRY.

BY PROF. OSCAR ERF,
Ohio State University.

PROF. OSCAR ERF: Gentlemen, I am delighted to appear before you. We have just listened to a very interesting discussion and I do not know what I can add on the subject of milk. Dean Davenport has thoroughly elaborated upon the wholesomeness on the economical side of milk, and there is little that I can say except to add probably that Dr. McCullom and Dr. Mandel in the light of their recent discoveries state that milk has probably the greatest growing and promoting material of any food, except air, that is known. Hence the absolute necessity of milk. Furthermore, Mr. Fisher brings out an interesting experiment in which he contends that milk has a good deal of disease resistance and he draws his conclusions on a basis something like this: The organic diseases are decreasing. The organic diseases are derived largely through fermentation of food in the alimentary canal, in other words in the colon. Bacteria inhabit the colon and produce poisons. The poisons are absorbed, they go into the blood stream, the arteries become inflamed and the result is that nature tries to protect itself and throws a cartilaginous tissue around the inside, causing hardening of the arteries and the result is either failure, or, in other words, paralysis, due to the particular kind of food that we eat, and he contends that a ration or a meal like, for instance, beefsteak, potatoes, bread and coffee, used constantly, produces a culture of bacteria in the colon that makes this poison; while if a man would consume a large quantity of milk that the nature of the bacteria would change and instead of having the particular kind that produces poison the colon would be inhabited with the kind of bacteria that would produce lactic acid, which, as a matter of fact, is a food.

It is a very interesting piece of work, and shows another added feature of the value of milk as a food.

I want to say a word in reference to the kind of milk that is produced out in the country and produced in the city on the slops of some particular manufacturing concern. In Ohio we have passed a law prohibiting the feeding of slops in cities to cows that furnish milk to babies. I think it is a wise move. We have found in several cases the mortality has increased to a great extent wherever this milk was fed; it cheapens the cost of production. I can show you one instance where cows were kept in a stable near a distillery and the distilled slops were pumped out of the kettles directly in front of the cows. There was no labor except the labor of taking care of the pump, so far as feeding the cows was concerned. It reduced labor to a considerable extent. The cows were miscellaneously bought up, they were poor cows, and in these days farmers don't sell cows unless there is something wrong. The old system of buying cows and feeding them and milking them until they are fat and then slaughtering them for beef must be a thing of the past. That is entirely the wrong method of dairying. Dairy cows should be maintained and kept in the country in a good, healthy place, and they should be dairy cows, and should be used for that purpose. But these people bought these cows, usually tubercular cows, because a man that felt the necessity of getting rid of particular animals sold them to these people. These dealers put these cows into this particular dairy. They would naturally increase in flesh on account of the change of diet, the sloppy kind. They would swell up and the meat was not really solid, but it added gain, and gain was profit. But the

milk was of a decidedly inferior nature. We have tested milk from these cows that gave as little as one-half of one per cent of butter fat. Of course, they were Holsteins, but some of the other cows—Jerseys—came away down in fat. The milk was not whitish, it was bluish, in fact the casein was not really normal. I contend that a city is no place for a cow. The place to keep a cow is out in the country, and if we want to save these slops or feeds the proper thing to do is to dry them and sterilize them and send them out to the country to be fed. You might say that adds expense. Yes. But what is expense to health? The health of the state is the most important item in this proposition.

I would like to see more universal methods of inducing sanitary conditions. I would like to see more universal regulations. I think one of the things that discourages farmers and producers to a great extent is the irregularity of the standards that we have for milk products. I know that some of them are so high that if they actually enforce them, milk would be worth thirty cents a quart. I believe in having single standards. You know there are limitations of sanitation. We are constantly confusing sanitation with art. A man who wears a silk hat and a frock coat isn't necessarily sanitary. A fellow that wears blue jeans that have been properly boiled is more sanitary. It is not a question of looks, it is a question of effect, and we inspect dairies by looks more or less. I remember some of the inspectors that I found in certain places. They would travel along and stand up in the buggy and look over the place, and if it looked good they would mark down a certain score and go on. That is no way to inspect dairies, and I hope that process will be eliminated. I know full well the troubles that you encounter in inspection, and personally I like the idea of creating organizations in the states, by which the dairymen themselves do some of the inspecting. Laws are enforced by public sentiment, and if the public or the farmers out in the country are not in sympathy with your laws you can "go to," and you can't accomplish very much. Now, you have to get these people in the right attitude, and how are you going to do that? Just let me cite an illustration. Some four or five years ago we organized a little organization in the western part of the state, which is known as the Barnsville organization, primarily for the purpose of creating a uniform price for milk and establishing a uniform method of purchasing milk. At that particular time milk was sold in that community by the hundred and by the per cent of fat and in various ways. It was a cow-testing association originally, and they saw the benefits of weeding out the poor cows, and by the way they have changed their average production of something like a thousand cows from 175 pounds of butter fat per year to 312 pounds per year, through this organization. They established this producer's organization. They went to the dealer and said, "We are all united and we are going to sell you our milk. What are you going to give us for this milk? We will guarantee you milk of a certain quality, and you pay us the best price." It was all agreed upon. In fact, the dealer paid him ten cents a pound more for butter than he had been paying. But when they employed their own men to take in the milk at a certain plant and to score that milk and test it, immediately they ran up against these sanitary obstructions. There was a large amount of milk they had to discard because it didn't conform to the contract. They couldn't send it in. They formed a committee of five to go around and see these people that were producing this milk; they couldn't go into Wheeling and Pittsburgh under the contract that they had agreed to put milk in. One visit was about enough, of five farmers visiting another farm, sitting down and telling them the trouble and what he had to do, and it wasn't 30 days until every one of those farmers that were visited complied with the regulations. There was a scheme of inspection from the city standpoint for five years. They had never accomplished the thing they wanted to accomplish, because they couldn't deliver the message to the farmer rightly, public sentiment being against them. So I believe thoroughly in organizing the farmer, not alone for increased production, for lowering the cost of production,

but for sanitary reasons, for increasing the sanitary conditions.

I know well that we are confronted with a serious condition right now, in reference to production. Dean Davenport has well discussed this matter. Some 24 years ago I knew of eight farms that were paying twelve dollars a month for labor, and labor worked from 4 o'clock in the morning till 7:30 at night. Milking was a side issue. You were expected to milk before you went out to the field at 6 o'clock, for exercise and amusement, then after you did a good day's work you had to go through that same operation again. Now, the same thing is true with the prices of corn or wheat, of all sorts of feeds. They have risen. Do you know that corn only four years ago was fifty cents a bushel and milk was 9 cents a quart? Corn during the past year went up as high as \$2.30 a bushel. You can easily figure the proportions, but milk never went above 13 cents. Now, remember, there is a very serious proposition. If we figure the conditions of twenty-five years ago, at 5 cents a quart I would be willing to produce milk and make more money than milk today at 15 cents a quart. In other words if you figure the right proportion, milk would be worth about 35 cents a quart. In those days we had cows that were producing 2,500 to 2,700 pounds of milk. Today we have cows that are producing 4,000 and 5,600 pounds of milk. Efficiency methods have kept the price down to where it ought to be, and you have to thank science for that. A good many people complain about scientific agriculture and about the new scientific schemes that the man of science has introduced, that the more science the higher the price. Not at all. If you were paying without science five cents a quart for milk 22 years ago, without science you would be paying 34 cents a quart today. You will have to recognize that.

I do not know that I can add anything to the talk that has been given, except that we must remember this: That the production of milk must be kept up at a maximum. There is a tendency right now for a lowering of production. As near as we can ascertain, there is a decided decrease in production, but usually we expect a decrease this time of the year, but the decrease is from four to six per cent greater this year than last year, during the dry season. There seems to be a tendency all over the country to lessen dairy operations. Conditions must be brought about so as to keep up the production of milk, because it is the most valuable food that we have. As Dean Davenport says, we must have it long before other foods. I think that is all. I thank you. (Applause.)

PRESIDENT FOUST: I want to say this has been a very interesting discussion. I know everyone here enjoyed everything that was said, by both Professor Erf as well as the one who opened it, Dean Davenport.

We will have a meeting tomorrow night and I hope everyone will stay here so that we can clean up this program as well as prepare the program in part for next year.

I am now going to ask Commissioner Purcell to make the report of the committee appointed to call upon Federal Food Administrator Hoover, to arrange for cooperation. Benjamin Purcell, of Virginia.

MR. A. M. G. SOULE: Mr. President, before Dean Davenport leaves, may I ask just one question regarding milk? The desirability of standardizing milk on a butter fat basis, and the sale of milk on a butter fat basis, regulated by statute.

DEAN DAVENPORT: Just what is the point?

MR. A. M. G. SOULE: The standardization of quality, and the sale of same.

DEAN DAVENPORT: Our laws in most cases provide a minimum. Of course the cost of milk now is getting so great that the farmers who produce very much above that are going out of business. The dealer must buy the milk on a butter-fat basis. When the dealer gets his milk in the vat he is still in danger that some inspector may get hold of a bottle that doesn't come up to the test. It is a tremendous

job to mix together milk of different qualities in a vat and get it into a bottle and still be safe. As it stands now, my understanding is that the dealer is in peril all the time, right at that point, and in order to protect himself he is putting it above the standard. I think we shall have to adopt some method by which the dealer can standardize his milk for sale more than he can now. I haven't studied that phase of it, but I do know that the fat is a costly part of the milk. It is what the buyer is after all the time, and if the dealer buys the milk fat there is continual trouble in keeping within the law. It is a difficult problem. I don't know what the solution is. The fat content is the vital thing, both from the producers' standpoint and from the consumers', it is the fat they are after. I believe that answers the question.

MR. A. M. G. SOULE: But you wouldn't be in favor of manipulations in the vat or creamery with reference to the extraction of any fat, being enacted by statute?

DEAN DAVENPORT: You can accomplish the same thing by putting in skim milk.

If it isn't right to take out the fat of milk and thereby change the property of solids in the fat, what is the harm in adding skim milk? Skim milk is a drug on the market everywhere. We do not like to touch the thing. All the same the public has got to face the point some time that this milk situation will be standardized, because if the dairyman doesn't standardize it the dealer will.

MR. A. M. G. SOULE: I thank you.

PRESIDENT FOUST: I would suggest that Commissioner Soule talk this over with the Dean or with Professor Erf, either one, during the afternoon. It is a very important matter.

In every state local conditions regulate all these matters. We have a minimum standard, they can sell it as much above that as they see fit, and the richness of the milk will make its own market.

REPORT OF COMMITTEE TO CALL ON MR. HOOVER, UNITED STATES FOOD ADMINISTRATOR, TO OFFER THE CO-OPERATION OF THE ASSOCIATION OF AMERICAN DAIRY, FOOD AND DRUG OFFICIALS IN ANY CAPACITY THAT THE FOOD ADMINISTRATION COULD UTILIZE THIS SERVICE MOST EFFECTIVELY IN HELPING TO WIN THE WAR.

BY BENJAMIN L. PURCELL.

Mr. President and Members of the Association of American

Dr. J. P. Street, Commissioner, the original chairman of this committee, having been called into the military service of the Government, found it necessary to resign the chairmanship. The President appointed Benj. L. Purcell, Virginia, as Dr. Street's successor.

Your committee called on Mr. Hoover at Washington in the month of October. Due to a misunderstanding the committee did not meet Mr. Hoover personally, but left a statement with his secretary expressing the earnest desire of the Association, as a whole and as individuals, to co-operate with the Food Administration in any possible way their services could be used by the Government. Mr. Hoover replied to this communication expressing his very high appreciation of the offer of service and advised your committee that he was perfecting the details of his organizations and that he would work out and advise the Association later how, in his opinion, their services could be used to the best advantage.

The Association as an organization has not been called upon by the U. S. Food Administration, but the services of a great many of the individual members have been very freely given and used by the National and State Administrators. Two prominent members of our Association have been selected by Mr. Hoover as Federal Food Administrators, and a number of our associates have rendered excellent aid to

the State Administrators. Your committee just received the following cordial letter from Mr. Hallowell, of Mr. Hoover's staff, which letter I am certain you will listen to with a great deal of pleasure:

"Washington, D. C., August 19, 1918.

Mr. Benjamin S. Purcell, care of Hugh B. Sproul, Esq.,
Federal Food Administrator, Richmond, Virginia.

Dear Mr. Purcell: We desire to acknowledge your letter of August 14 and to thank you most cordially for the splendid spirit which the letter indicates both on your own part and that of your associates among the Association of American Dairy Food and Drug Officials. We beg to assure you that it has been due to no lack of appreciation of the action of your Association that you have not been more specifically drawn into service nor have we been unconscious of the strengthening support which we knew lay at hand in the service you were prepared to offer. Our State Administrators have co-operated freely and to their great advantage with the officials representing the different lines of work into which your Association is divided. We have heard of nothing but cordial and friendly co-operation and have had occasion at numerous times to call the attention of local administrators to the value and aid available through these channels.

Will you please state to your Association at its coming meeting in Chicago how sincerely we appreciate their attitude. We shall feel the utmost freedom in summoning you collectively and individually to our aid and already have you listed among the group of patriotic associations which we consider a reserve of power to draw on in emergency.

We shall welcome suggestions from you and be delighted if you make occasion to drop in on us in Washington.

As you are aware, Mr. Hoover is abroad; otherwise he would join in our most cordial wishes for the success of your reunion at Chicago.

Faithfully yours,

UNITED STATES FOOD ADMINISTRATION,
States Administration Division.
Per John W. Hallowell."

Your committee, therefore, recommends that the individual members of this Association continue to render to the U. S. Food Administration their assistance in any way their services can be used to help win the war, and that the Association as an organization enthusiastically reaffirms its patriotic purpose and earnest desire to have our Government utilize our services wherever and whenever they may be used to the best advantage.

PRESIDENT FOUST: A motion is now in order to accept this report and continue the committee.

MR. A. M. G. SOULE: Mr. Chairman, I move that we accept the report and continue the committee.

MR. F. A. JACKSON: I second the motion.

(Motion put by chairman, and carried.)

PRESIDENT FOUST: It is so ordered. So they can now call on the committee at any time they see fit, and I want to state that yesterday when the paper of Dr. Kremers was read it opened up some matters with reference to drug standards, and I suggested a committee consisting of Dr. Kremers, Dr. Puckner and Dr. Alsberg go into this matter. I want to change that committee today for several reasons, and substitute for that committee Dr. Frear of the State College, Dr. Ladd of North Dakota, and Dr. Blanck of Baltimore, Maryland, so that they can draft a resolution in order to express the wishes of this association on that very important subject.

We still have 25 minutes, so we will take up item 3. I understand that Major Street is not here, so we will not have that subject to dispose of. No. 2 we have disposed of, and we take up No. 3 now, "Food Regulations in War Times as Compared to Times of Peace," by Mr. George L. Flanders, Counsel, Department of Farms and Markets, New York.

MR. GEORGE L. FLANDERS: Mr. President, and members:

Permit me to state that some time before America entered into the present war I was called upon to make an address before an organization composed of ladies, who wanted to do something to lower the price of food products, the cost of living, and they asked me to tell them how. You can imagine how successful I was in answering that question. The only thing I could do was to fall back on fundamental principles that prices were the result of the law of supply and demand, and I would figure it out like this. You can do it in two ways; you can increase the supply so that it is sufficient and greater than the demand, or you can increase and decrease it so it will fall within the line of supply, and then prices may go down. Then they asked me this question, and this is the point I want to bring out: can't the national government enact a law fixing the prices of food? And I said no. Note you, that was before we entered into the war. After we entered into the war I surmised that they presumed I didn't quite know what I was talking about when I said the national government didn't have the power. I want to bring out that point in this paper.

FOOD REGULATIONS IN WAR TIME AS COMPARED TO TIMES OF PEACE.

BY GEORGE L. FLANDERS,

Counsel, Department of Farms and Markets, New York.

We are a hundred million, and over, Americans living under a government of states bound together by a constitution which is the fundamental and supreme law of the land. It is a government of conferred powers agreed to and established by the people themselves. As it stands it is the latest expression of the will of the people and has no superior except the will of the people when so expressed as to legitimately change the document. As such, it is the basis of our principles and our rights making us a coherent and hence a strong people. John Fisk says that the written constitution is a social contract between men to determine certain relations between them in civil society. It being the basis of our fundamental rights, the principles involved and set forth in it should be known and understood generally by all citizens and respected, obeyed and sustained as our civil guide or creed. As such it should not be lightly treated nor subject to spasmodic changes.

The fathers evidently had this in mind when providing how changes should be made. The method provided is such that of itself it insures careful consideration and deliberation and precludes hasty action. Lecky, in speaking of this feature of our constitution, said:

"An appetite for organic change is one of the worst diseases that can affect a nation. All real progress, all sound national development, must grow out of a stable, persistent, national character, deeply influenced by custom and precedent and old traditional reverence, habitually aiming at the removal of practical evils and the attainment of practical advantages, rather than speculative change. Institutions, like trees, can never attain their maturity or produce their proper fruits if their roots are perpetually tampered with. In no single point is the American constitution more incontestably superior to our own than in the provisions by which it has so effectually barred the path of organic change that the appetite for such change has almost passed away."

Fisk says:

"At the time of the Revolution, when the several states framed new governments, they simply put a written constitution into the position of supremacy formerly occupied by the charter. Instead of a document expressed in terms of a royal grant, they adopted a document expressed in terms of a popular edict. To this the legislature must conform; and people were already somewhat familiar with the method of testing the constitutionality of a law by getting the matter brought before the courts. The mental habit thus generated

was probably more important than any other single circumstance in enabling our Federal Union to be formed. Without it, indeed, it would have been impossible to form a durable union. * * * We may observe that American state constitutions have altered very much in character since the first part of the present century. The earlier constitutions were confined to a general outline of the organization of the government. They did not undertake to make the laws, but to prescribe the conditions under which laws might be made and executed. Recent state constitutions enter more and more boldly upon the general work of legislation. For example, in some states they specify what kinds of property shall be exempt from seizure for debt, they make regulations as to railroad freight charges, they prescribe sundry details of practice in the courts, or they forbid the sale of intoxicating liquors. Until recently such subjects would have been left to the legislatures: no one would have thought of putting them into a constitution. * * * There is also, no doubt, a disposition to distrust legislatures and in some measure do their work for them by direct popular enactment. For such reasons some recent state constitutions have come almost to resemble bodies of statutes. Mr. Woodrow Wilson suggestively compares this kind of popular legislation with the Swiss practice known as the Referendum. * * * 'The objections to the referendum,' says Mr. Wilson, 'are, of course, that it assumes a discriminating judgment and a fulness of information on the part of the people touching questions of public policy which they do not often possess, and that it lowers the sense of responsibility on the part of legislators.' Another serious objection to our recent practice is that it tends to confuse the very valuable distinction between a constitution and a body of statutes."

Mr. Justice Strong of the Supreme Court of the United States, said in *Knox v. Lee* (Legal Tender Case):

"We do not expect to find in a constitution minute details. It is necessarily brief and comprehensive. It prescribes outlines, leaving the filling up to be deduced from the outlines. In *Martin v. Hunter*, 1 Wheat., 326, it was said: 'The Constitution unavoidably deals in general language. It did not suit the purpose of the people in framing this great charter of our liberties to provide for minute specifications of its powers, or to declare the means by which those powers should be carried into execution.'

"Chief Justice Marshall in *McCulloch v. Maryland*, 4 Wheat., 405, states: 'A Constitution, to contain an accurate detail of all the subdivisions of which its great powers will admit, and of all the means by which it may be carried into execution, would partake of the prolixity of a political code, and would scarcely be embraced by the human mind. It would probably never be understood by the public. Its nature, therefore, requires that only its great outlines should be marked, its important objects designated, and the minor ingredients which compose those objects be deduced from the nature of the objects themselves.' The government of the United States is acknowledged by all to be one of enumerated powers, from which it necessarily follows that powers not granted cannot be exercised."

With the above in view, I call your attention to the provisions of Section 8 of Article I of the Constitution of the United States, which is composed of eighteen subdivisions in which the powers granted to the United States government are enumerated. Subdivision 3 of the enumerated powers provides that Congress shall have power to regulate commerce with foreign nations and among the several states and the Indian tribes. When National food legislation was contemplated one of the first inquiries was: To what extent can the National government go in regulating the manufacture, sale or distribution for sale of food products? It was concluded that the only power delegated to the National Government under which it could so regulate was subdivision 3, above referred to, consequently the national law was enacted providing for the regulation of the sale of food products in interstate commerce and not extending it to the internal or intrastate commerce. This was left for legislation by the states. You will all remember that when the

National Act was passed the impression prevailed in some quarters that that legislation superseded state legislation and made state legislation unnecessary. It soon, however, came to be understood that it had its special field, to-wit: the National Law, its field in controlling interests and international trade and trade in the territories and the District of Columbia, and that state legislation covered the internal traffic within the state. This question has all been discussed before this body to such an extent that it is not necessary to make further mention of it.

When the United States declared that a state of war existed between Germany and the United States it thus opened up a new field for legislative and administrative action in relation to food and food products, namely, the exercise of the powers by the National Government in relation to said products to such extent as might be permitted by the Constitution in the powers therein conferred in addition to the powers to regulate commerce; such powers being known as War Powers. These powers are set forth in the following subdivisions of Section 8, Article I, of the constitution:

"10. To define and punish Piracies and Felonies committed on the High Seas, and Offences against the Law of Nations;

11. To declare War, grant Letters of Marque and Reprisal, and make Rules concerning Captures on Land and Water;

12. To raise and support Armies, but no Appropriation of Money to that Use shall be for a longer Term than two Years;

13. To provide and maintain a Navy;

14. To make Rules for the Government and Regulation of the land and naval forces;

15. To provide for calling forth the Militia to execute the Laws of the Union, suppress Insurrections and repel Invasions;

16. To provide for organizing, arming, and disciplining, the Militia, and for governing such Part of them as may be employed in the Service of the United States, reserving to the States respectively the Appointment of the Officers, and the Authority of training the Militia according to the discipline prescribed by Congress;

17. * * *

18. To make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any department or Officer thereof."

Subdivision 1 of said section provides:

"1. The Congress shall have Power To lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common defense and general Welfare of the United States; but all Duties, Imposts and Excises shall be uniform throughout the United States;"

It is to be noted that nowhere in the provisions above quoted is there any *specific* statement made or power given in relation to food, but that subdivision 18 gives general power to do the things necessary for carrying into execution any of the foregoing powers. In the legal tender cases Mr. Chief Justice Marshall is quoted as saying in *Martin v. Hunter*:

"The government of the United States can claim no powers which are not granted to it by the Constitution, and the powers actually granted must be such as are expressly given or given by necessary implication."

This implication, it is true, may follow from the grant of several expressed powers, as well as from one alone, but the power implied must, in all cases, be subsidiary to the execution of the powers expressed."

"The interpretation given by Mr. Hamilton was substantially followed by Chief Justice Marshall in *McCulloch v. Maryland*, when, speaking for the court, he said that if the end to be accomplished by the legislation of Congress be legitimate, and within the scope of the Constitution, 'all the means which are appropriate, which are plainly adapted to that end, and which are not prohibited, but are consistent with the letter and spirit of the Constitution, are constitutional.' The Chief Justice did not, it is true, in terms declare that legislation which is not thus appropriate, and

plainly adapted to a lawful end, is unconstitutional, but such is the plain import of the argument advanced by him; and that conclusion must also follow from the principle that, when legislation of a particular character is specially authorized, the opposite of such legislation is inhibited."

To illustrate: Under the powers granted the government may act anywhere within the scope of the powers in the United States, for instance, the power to coin money is not restricted and the money can be used anywhere in the United States; the power to establish postoffices and post routes is a general power and the government establishes postoffices within the state and anywhere within the United States for the purpose of distribution of the mails. There is, however, as heretofore stated, no express power granted by the Constitution as to specific legislation relative to food products, therefore, the power to legislate relative to food products—if it exists at all—must exist by implication or as a power necessary for carrying into execution some of the powers specifically granted. Such powers were under discussion in the legal tender cases and in an opinion—though one dissenting from the exercise of the powers that were exercised in the case under consideration—Mr. Justice Clifford said:

"Money is, undoubtedly, the sinews of war, but the power to raise money to carry on war, under the Constitution, is not an implied power, and whoever adopts that theory commits a great constitutional error. Congress may declare war and Congress may appropriate all moneys in the Treasury to carry on the war, or Congress may coin money for that purpose, or borrow money to any amount for the same purpose, or Congress may lay and collect taxes, duties, imposts and excises to replenish the treasury, or may dispose of the public lands or other property belonging to the United States, and may in fact, by the exercise of the express powers of the Constitution, command the whole wealth and substance of the people to sustain the public credit and prosecute the war to a successful termination."

In the same opinion Justice Clifford says:

"Powers not granted cannot be exercised by Congress, and certainly all must agree that no powers are granted except what are expressed or such as are fairly applicable as requisite means to attain the end of a power which is granted, or, in other words, are necessary and proper to carry those which are expressed into execution."

The exercise of a power to insure proper production and distribution of food products in time of war can scarcely be classed as not necessary to the proper exercise of the power granted to declare and carry on war. The exercise of such a power is not only necessary but may be vitally necessary to the continued existence of the government. As such, it undoubtedly falls fairly within the provisions of subdivision 18 of Section 8 of Article I of the Constitution as being a power necessary to the execution of one of the conferred powers and, if it be so, it is one of the powers the proper exercise of which may be vital to the life of the nation.

As to the question of implied powers, Mr. Chief Justice Marshall in *Martin v. Hunter* said:

"This implication, it is true, may follow from the grant of several express powers, as well as from one alone, but the power implied must, in all cases, be subsidiary to the execution of the powers expressed."

As to the question of food legislation applying to the internal affairs of the state during war time, there can be no question but what the exercise of the power of the national government is subsidiary to the powers granted to make war and it is a power necessary to the continued existence of the government.

Mr. Chief Justice Strong, who wrote the prevailing opinion in the legal tender cases, stated:

"It is impossible to know what those non-enumerated powers are, and what is their nature and extent, without considering the purposes they were intended to subserve. Those purposes, it must be noted, reach beyond the mere execution of all powers definitely intrusted to Congress and mentioned in detail. They embrace the execution of all other

powers vested by the Constitution in the Government of the United States, or in any department or officer thereof. It certainly was intended to confer upon the Government the power of self-preservation. * * * It is not indispensable to the existence of any power claimed for the Federal Government that it can be found specified in the words of the Constitution, or clearly and directly traceable to some one of the specified powers. Its existence may be deduced fairly from more than one of the substantive powers expressly defined, or from them all combined. It is allowable to group together any number of them and infer from them all that the power claimed has been conferred. Such a treatment of the Constitution is recognized by its own provisions. * * * A Constitution is framed for ages to come, and is designed to approach immortality as near as mortality can approach it. Its course cannot always be tranquil. It is exposed to storms and tempests, and its framers must be unwise statesmen indeed if they have not provided it, as far as its nature will permit, with the means of self-preservation from the perils it is sure to encounter."

From the above quotation the conclusion seems to be irresistible that the Federal Government has in time of war the power to enact laws to control the production and sale of food products within the states and territories of the United States and that such laws will take precedence over any enactments with which they are in conflict. We can also conclude that as this is a war power or measure, that when the war is closed and the country is again on a peace basis that such power so conferred by National legislation will cease and that the legal and constitutional powers appertaining to peace times will again prevail. This should be impressed upon the mind of the layman so as not to permit the view to become general that because the Government in time of war can enact necessary drastic legislation that it can do so in times of peace. (Applause.)

PRESIDENT FOUST: I want to say that just as I expected, here is a paper along the line of a subject that each one at this convention ought to have been in here and heard, and I think the attendance outside was larger than in here. They have missed a very important paper, and I trust that tomorrow morning at 9 o'clock we will be in this room, that all will keep in mind that there will be a night session. We will now stand adjourned.

(The meeting adjourned at 12 o'clock.)

ASSOCIATION DINNER.

Thursday, August 29, 7:00 P. M.

WILBUR D. NESBIT, TOASTMASTER.

The program at the Association dinner included the following:

Address—"Relation of the Wholesale Grocers to Food Control Departments," by Mr. Arjay Davies of Joliet, Ill., President of the National Wholesale Grocers' Association. This address was read by Mr. Jay D. Miller, General Counsel for Sprague, Warner & Company, Chicago, Ill.

Remarks on the benefits of co-operation of Women's Clubs with the State Food Department, by Mrs. J. F. Nachbour, representing the Illinois Federation of Women's Clubs.

Address—"Winning the War," by Mr. W. A. Milne, Washington, D. C., head of the Miscellaneous Activities Division of the United States Food Administration and director of the Speakers' Bureau of that organization.

Remarks by Mr. O. J. Moore, Wholesale Grocer, Sioux City, Iowa.

Douglas Malloch, Chicago poet and humorist.

Captain Albert Beeman, American Expeditionary Forces, on furlough from the fighting front.

Miss Bernice Seabury, singer, 2914 Groveland avenue, Chicago.

RELATION OF THE WHOLESALE GROCERS TO
FOOD CONTROL DEPARTMENTS.

BY ARJAY DAVIES.

GENTLEMEN AND LADIES:

I deeply appreciate this opportunity of conveying to the Dairy, Food and Drug Officials of the United States the greetings and good wishes of the members of the National Wholesale Grocers' Association of the United States. I have been requested to deliver to you a few remarks on the subject of the benefit of food laws to the honest manufacturer and wholesaler, as well as to the consumer. Nothing is of more vital importance to the honest food merchant and manufacturer than strong and effective food laws and the energetic enforcement thereof. In the absence of protection from merchants who sell adulterated foods or foods fraudulently labeled, it becomes almost impossible for the honest manufacturer and food merchant successfully to remain in competition unless he descends to the level of the competitor who has no scruples in the matter of fair dealing with the consumer.

While the subject has been agitated for many years, it is, nevertheless, a fact that one of the most important topics today is the subject of uniformity between state statutes and regulations, not only on food subjects but on commercial subjects generally. As the interstate business of the country continues to grow the more important and vital this subject becomes. This subject is particularly timely during these war times when the necessity of eliminating wastage and friction and duplication of effort is absolutely essential to the successful prosecution of the war.

Up to 1905 only twenty-five (25) states had food laws that were in any sense adequate, and these statutes were so poorly enforced that interstate shippers hardly felt the need for uniformity and were little concerned by the diversity in state statutes.

About this time, however, the agitation for pure food and better methods of manufacture became so pronounced that food officials all over the country were stirred to decided action which immediately resulted in such a conflict of state decisions based on varying laws that manufacturers and dealers found themselves confronted with the necessity of preparing and labeling their products in as many different ways as there were laws in the respective states.

The handicap of this condition of affairs from a practical as well as a commercial point of view can hardly be imagined. The business of preparing and distributing food products had long since ceased to be confined to the boundaries of any one state. Certain states whose soil or climate nature had especially smiled upon had become the producers and packers of specific articles of food for the entire nation. The avenues of trade were national, not local, and it was a national and commercial absurdity that an article of food should be considered legally pure in one state and impure in another; that harmful substances could change their character as they cross state lines; that a truthful label in New York should become false in California. Purity, harmfulness and truth are not supposed to be variable terms.

So it was that the merchants, manufacturers and trade organizations turned their energies toward relieving in some manner the chaotic conditions with which they were confronted, and not from any alleged charitable motives but from motives of pure self-protection lent their support to the passage of the National Food and Drugs Act, which became a law in June, 1906.

Chief among these organizations was the National Wholesale Grocers' Association, and the work of this and kindred organizations successfully urging the passage of similar pure food legislation throughout the states shows conclusively what can be accomplished toward uniformity if powerful trade organizations will only explain to the state legislator the

commercial and practical need for uniform legislation on the particular subjects in which they are interested.

The passage of this national statute was not the result of any sudden determination on the part of the national government to do something toward regulating the manufacture and sale of food and drug products. For many years bills of similar character had been introduced in Congress and had failed of passage because of lack of popular support. The officials of the Department of Agriculture had studied the questions involved, watched the workings and food decisions under state statutes, and the act which finally became law represented years of experiment and study on the part of both national and state officials and has come to be recognized throughout the country as a model food law.

While it may be contended that the national law ought to be strengthened in some respects, it must be admitted that it is an admirable statute from many viewpoints. It contains concise yet all inclusive general rules. All injurious food products and all fraudulent practices are condemned in one short statute. This method of legislation simplifies the law for the merchant without sacrificing effectiveness. To particularize in food legislation is to limit its application and therefore its effectiveness.

This statute does not attempt to legislate on scientific questions but leaves such questions for scientific determination and regulation. It provides opportunity for the injured party to be heard in defense of his products before court proceeding or seizure. It provides a means for co-operation between state and national food officials by requiring the national authority administering the law to examine and report upon any specimen of food submitted by the health officer of any state. It is the only present basis for uniformity on this subject throughout the various states.

Among the bills or amendments most frequently suggested in state legislatures have been those providing for a set of food standards. Standards are definitions of the required ingredients, chemical strengths and percentages of ingredients going to make up certain food products. It is urged by various food officials and chemists that the existence of standards will materially assist in the enforcement of food legislation, and that they should be added to the body of the law. Trade associations generally do not deny that the existence of standards would be mutually helpful to both merchant and food official, but they vigorously assert that if standards are ever to be fixed and established they must be national standards, and that the adoption by any one state of a set of individual standards under the expectation that the other forty-seven states would accept the same definitions covering a countless number of food products is wrong in principle, would lead to helpless chaos and confusion, and instead of accomplishing standardization would result in demoralization of all methods of food production and control.

Colorado would certainly not swallow the Wisconsin standards whole. California will have her own ideas as to fruit standards. Minnesota will not complacently follow Texas in fixing the precise scientific proportions of fibre, ash, nitrogen and moisture that must be found in "statutory flour." Louisiana would hardly be expected to copy the nice fractions that New Hampshire might fix for molasses or cotton seed oil.

Clearly, the very idea of a standard implies correctness and uniformity, and the establishment of such should come only as the result of careful, scientific consideration of the questions involved. It has been well suggested that if standards are to be adopted they should be officially framed by a national commission established under an amendment to the National Food and Drugs Act. The membership of the commission should include representative state food officials, food chemists, experienced legal officers and practical food producers.

Such standards so established would find ready acceptance by the various states whose food officials under the usual state law now have implied authority to adopt standards as guides and rules for departmental action.

Considerable progress has already been made along these

lines by the splendid co-operation of your association and the Association of Official Agricultural Chemists and the United States Department of Agriculture, as evidenced by the many standards of nation-wide application that have been adopted in recent years by the joint Committee on Definitions and Standards.

Standards should never be enacted into statutory law by any state or by the nation, for the very reason that they necessarily are the result of scientific study and subject to change and alteration as the science of food production improves and new ingredients and new methods are discovered.

If the movement for uniformity of law on any subject, be it negotiable instruments, bills of lading or foods, is to finally succeed, many of our state lawmakers must yield some of their personal ideas or mistaken pride of independence and freely and unreservedly give their support to uniform laws and regulations upon any subject that has been the result of years of study and experiment by national or state authorities and that has the sanction of learned jurists and experts in the field that it is designed to cover. Every state of our country is not only a distinct sovereignty but is also a part of the greater unit and in any truly American view of loyalty it owes undoubted obligations to every other unit in that whole. In the deepest and truest spirit of patriotism and sense of civic duty, every state must in its various executive, legislative and judicial acts recognize its obligations to the merchants of other states shipping to its markets when dealing within its borders. These are obligations that every state expects her neighbor to show to her own citizens, and surely it is most shortsighted and unjust to neglect the obligation that common courtesy asks in return.

The National Wholesale Grocers' Association, during its entire existence, has done its best to secure food laws and regulations that would be fair and just alike to the consumer, manufacturer and dealer. Our association at all times stands ready to co-operate with the food officials of the country and the legislators in their endeavors to put food regulations in our country on the highest possible plane of efficiency.

WINNING THE WAR.

Synopsis of Address given by W. A. Milne of the U. S. Food Administration.

In opening his address on the subject, "Winning the War," W. A. Milne of the United States Food Administration described the war as a race between Germany and the United States. He stated that because of our tardiness in entering this race we are now forced to overcome a terrific handicap. We entered it at a time when Germany had already gained absolute control of a territory of 862,660 square miles with a population of over 76,000,000 people. He displayed several large wall maps and charts visualizing these gains, one of which was a map of the United States with all of the territory from the Atlantic to the Mississippi River shown in black, this being about equal in area and population to the new territory gained by the Germans in the first four years of the war.

After describing the collapse of Russia, he said: "Let us be slow to blame and quick to pity and to help! Let us remember that for three weary years these people had bared their breasts to the oncoming Huns, and that five million of them were sacrificed for a cause that was ours as well as theirs. Let us remember that our own freedom was born in pain, and that half a million brave sons of the North and South laid down their lives that our black slaves be free; and remembering, let us throw over these poor souls, groping out of many years of the blackness of serfdom into the broad light of a free day, the mantle of charity and hold up high before their straining, bloodshot eyes the lamp of hope!"

He stated that until March of this year the Allies did not comprehend the full consequences of Russia's collapse, and

until then they continued to ask us for material and money rather than for men.

"But," said he, "the Russian revolution and the anarchy which led to the demoralization of the Russian army, in real fact made it impossible for France and Britain to win the war, and made success for the Germans patent to at least the Germans themselves, and to neutrals. From August, 1917, onward the hope of the Germans was to crush France and Britain before America could arrive, just as she sought to crush them in 1914 before the slow, clumsy mobilization of Russia could be effected."

He described the heroic efforts of the British, French and Italians in 1917, who met defeat after defeat, and yet doggedly held on.

"Thus," said he, "the calendar year and the campaign of 1917 ended amid the most gloomy of all possible circumstances, and the allied hope of a major offensive in 1918 had now to be surrendered, and the allied command was forced to recognize that there was no longer any chance of a victory in 1918, nor at any time until America should be able to replace Russia in the battle line."

For the enemy the new year dawned brilliantly. He could look forward to a return to the west now with his armies victorious in the east, he could look to superiority in guns and men. He had some forty divisions more than his enemies, exclusive of the Americans—and he felt that in 1918 the little makeshift army of Sammies was worthy only of contempt."

NO PEACE IN SIGHT.

He dwelt upon the improbability of an early peace, saying:

"Had peace been declared this spring its terms would have been dictated by Germany, glutted with the spoils of conquest and strong to enforce her relentless will upon her vanquished foes. Her dream of Mitteleuropa would have been more than fulfilled and she would be given the time to prepare for the next great war whose objective would be to make her mitsress of the world."

"Peace without annexation or indemnity—bosh! That will never be accepted by Germany so long as a Hohenzollern remains in power. In 1914 the Kaiser wrote in an album dedicated to the glorification of Germany's greatness, the following:

"Wherever a German in the faithful fulfillment of his duty lies buried, having fallen for his fatherland, and wherever the German eagle has planted his claws in the soil—such land is German and will remain German forever!"

"The first step to take to get that notion out of the Kaiser's head is to cut off his head; then take your time about the balance of the operation!"

"But peace did not come. Grimly, doggedly, passionately, the gallant British, French and Italians held on, while the young sons of America drilled in the snows of an exceptionally severe winter. Bled white with four years of war, and realizing in part what a doubtful struggle must come with spring, yet our Allies held on, and the burden of their faith was 'America, you have always played square, you have always made good—we trust you!'"

"In view of the facts I have just given you and while facing the outstretched, pleading, shadowy arms of the wraths of three million noble men who 'as He died to make men holy, they have died to make men free,' and realizing that these millions of souls have been returned to their God without a moment's time for preparation,—all that you and I might continue to breathe the air of freedom; in the face of all this, and knowing that these suffering peoples are absolutely dependent upon us for the bread they eat and for the men they have lost, how can any real American listen to the whinings of spineless pacifists! How can any two-fisted son of this free soil tolerate the few traitors who are still among us, and the few gibbering, petticoated men among us who would counsel peace by compromise at such a time as this!"

"The day of peace is not yet near at hand. And before it is reached we must steel ourselves to wade through seas of blood to that same Calvary where millions of noble men have

been crucified for the preservation of the same ideals, which we cherish and must defend. We must steel ourselves to the certainty that nothing short of the downfall of the Hohenzollern family will end the war, and that before it is over, hundreds of thousands of American homes may be in mourning. There is no escape. We are unalterably pledged not to deal with the present government of Germany. What does that mean? There can be no peace while the Kaiser remains enthroned; there can be no peace while Belgium bleeds, while Serbia is enslaved, while all the 76,000,000 freemen now under the heel of Germany suffer and die. Let no one, through ignorance of the facts or through a malicious wish to slow up your part in the war, hint to you of an early peace. Brand such a man as a fool or a pro-German.

"What does our government think of the length of the war? Judge from the fact that it is thinking in terms of 5,000,000 fighting men abroad, and that all its contracts and its plans are upon this stupendous basis. Judge from the fact that many millions are to be spent upon an eastern plant to turn out an immense number of large field guns, and that the first gun from that factory cannot be ready to ship for two years! And your Uncle Samuel has earned a world-wide reputation for long-headedness. Is it likely that in this crisis his wits have failed him?"

CRITICS CONFOUNDED.

Speaking of what the United States has accomplished in its first year at war, Mr. Milne said:

"One of the easiest things we do in this country is to criticize our government and each other. And there has been, until lately, a vast amount of unreasoning criticism which has been very sweet to the ears of our enemies. Mistakes have been made; there has been waste. Such was unavoidable in the rapid organization of a peaceful, unprepared, wealthy nation for a major part in the greatest war in all history. Our mistakes and our wastes have been infinitesimal compared with those of Britain during the first years of the war; and our accomplishments in our first year of effort are at once the admiration and the wonder of the world. Even Congress laughed and scolded Secretary of War Baker for his assertion that before the end of 1918 one million men would be abroad. With still five months to spare, 1,273,000 are now in France, and we're sending them over at the rate of 250,000 per month!

"And to equip them the Ordnance Department has actually delivered over 2,000,000 rifles, two billion cartridges, 82,540 machine guns, and is now producing 2,000,000 hand grenades and 1,000,000 rifle grenades per month. We have produced over 40,000 machine guns and are only beginning. In aircraft we have delivered over 6,000 planes, and our merchant marine has now grown to 10,000,000 tons, and 10,000 tons of shipping are being launched every twenty-four hours.

FOOD SAVING.

"But, great as has been the accomplishment of the various governmental departments, the greatest and the most significant of all has been the willing, the cheerful sacrifice of a large percentage of our people in the matter of food. No other warring nation has felt it safe to take a chance on the voluntary saving of food by its people. All of them are on a rigid card-rationing basis. When Herbert Hoover consented to take charge of our Food Administration it was with a firmly-rooted conviction that a self-governing democracy could be successfully appealed to, that such a democracy could justify its existence by voluntarily doing the right and the square thing. Our Allies feared the result, very many of our own people feared it still more; but Hoover's passionate belief in the innate goodness and fairness of the American people has been justified a thousandfold!

"What have we done? In the matter of wheat our visible exportable surplus from the 1917 crop was 20,000,000 bushels; we have actually shipped abroad, out of the 1917 crop, 141,000,000 bushels! We have shipped much more than our Allies declared as their minimum! And all that we have

shipped is what you and I voluntarily saved, not because we *must*, but because we knew we *should*.

"In beef our ordinary pre-war shipments were 2,000,000 pounds monthly; in one single month this past year we have shipped 87,000,000 pounds, and our total increase in actual shipments in 1917-1918 over our shipments of 1916-1917, amounts to 844,600,000 pounds!

"In pork products our ordinary rate of shipment has been 50,000,000 pounds monthly; during one month of this year we shipped 308,000,000 pounds!"

He warned against over-confidence and against reckless wastes of food, and stated that only by a very narrow margin had we gotten through to this harvest. How narrow that margin was he described as follows:

"Last December Clemenceau, the Premier of France, cabled Herbert Hoover that the minimum requirement of the Allies would be 11,000,000 bushels of wheat per month, and asked what maximum shipment could be expected monthly from the United States. France and England were then skating on very thin ice with only a few days' supply on hand. Breathlessly he waited the reply, refusing to leave his desk to eat or to sleep. The afternoon waned and night fell and still no reply; and still the little anxious group waited for the word that meant victory or defeat; and, outside, three nations of half-fed men, women and children waited, waited for America's answer. Near midnight the cable came and when decoded it read, 'We can send you two million bushels per month.'

"My God, we are beaten! The war is over!' murmured several of the little group, and silent, bitter tears coursed down the bronzed cheeks of these big men. But Clemenceau gripped his desk with both hands and his big keen eyes flashed fire. 'I don't believe it! It isn't true! The Americans can be trusted; they'll do their part! There's some mistake. Cable at once asking them to repeat their message!'

"All night long they waited while cheeks grew pale and eyes grew bloodshot and every man lived a lifetime of suffering during that dreadful night. No thought of food or rest; not a word spoken. At daybreak came the repeated message and with trembling hands Clemenceau opened it. It read: 'We can send twelve million bushels per month.' And they had only asked for 11,000,000! An error had been made in coding the first cable. Clemenceau bowed his head in prayer: 'Lafayette, you have not been forgotten!'

"When Mr. Hoover sent that cable he did not have the wheat to send, but he did have a sublime confidence in the good faith and unselfishness of his beloved America. You have justified him and he has more than made good his promise.

"We got under the wire; but is it wisdom for any nation at war to take such a chance with victory in the balance and millions of lives at stake? We must lay up tremendous reserves of food both here and abroad out of this abundant harvest. We must prepare for a war the end of which no man can see, and we must fortify against lean years which may come to us. We can afford no longer to take such a long chance and gamble with the fortunes of war. We still must save, not because we have not enough wheat and meat in sight for our present needs and the present needs of our Allies, for that for the moment is assured; but because we must look for a decreased yield as a larger number of our farmer boys are called to the colors, and God may not be always as kind to us as He has been this year in giving us bountiful harvest. As the corn laid up in Egypt saved the day, so must our reserves save our Allies and us in the long struggle which is inevitable. That is only good horse sense, and as our hearts moved us to save and ship in 1917-18, so let our heads move us to save, ship, and store in 1918-19."

MEEKNESS COUNSELLED.

Deploring our tendency to boastfulness, Mr. Milne said:

"But, while we have done wonderfully well for a beginning, we have not yet caught the full spirit of this war, we have not yet begun to sacrifice; and instead of strutting like peacocks we should walk with bared heads and in humility beside the

veterans of Britain, France and Italy, who have toiled their weary way bent beneath their cross to the Calvary of the nations. The United States will not be spared a single inch of that way and there have been no tears shed by the motherhood of the Allied nations that our own mothers here will not shed. We will send our men with the same glad enthusiastic ardor that they have been sent out of their British, French and Italian homes, and they will give just as good an account of themselves. But we must knit our brows to the daily grind. We have come to the time when we must mingle our tombs and tasks and consecrate each hour with tears!"

SACRIFICES OF BRITAIN.

Mr. Milne outlined the work of the women of England, showing that 260,000 English girls from gentle homes had enlisted for the term of the war at twenty-five cents a day, and that their work had increased the acreage of England three and one-half million acres and made England one-third sustaining; how the trains, street cars, elevators are all run by women, and how they are doing work in the factories where many of them have shaved off their hair, and where the chemicals have turned their faces a permanent yellow. He told of the work of over one million English girls in France, the Tommywacks, and said:

"Over five million of the women of England, many of them mothers, fifty and sixty years old, are carrying on in these ways, all of them bearing this physical burden and many, very many of them bearing the greater burden of a sorrow that cannot be appeased until the grave gives back its dead; and not a word of complaint, but a look of divine exaltation upon their faces; for they have caught a glimpse of what a German world would mean—and they just carry on!"

"Oh, women of America, much as you have done for the Red Cross, for the conservation of food, for every other war activity, dare you whisper your efforts and call them sacrifices in the light of such things as these! You have not as yet touched the hem of the garment of sacrifice. But you must soon wrap yourselves in its folds, and when that day comes you will do it just as bravely, just as willingly as your English sisters have done. God grant it may be withheld from you a little longer!"

He told of how Britain and her colonies had raised an army of 7,500,000 men, and how their casualties had been 2,500,000 men. In proportion to population this would mean an army of 20,000,000 in the United States with a casualty list of 7,000,000; of how her navy had transported 13,000,000 men, 2,000,000 horses and mules, half a million vehicles, 25,000,000 tons of explosives, 57,000,000 tons of fuel, and 130,000,000 tons of food and other stores; and it had meanwhile enabled America to make billions of profit, and had protected our homes, our children and the honor of our women. Deploring a certain anti-British feeling in this country, Mr. Milne said:

"Any man calling himself an American who sneers at Great Britain in the light of these facts is both a fool and a traitor. We must remember that the England of today is not the England of 1776, and that George III, against whom we fought in that day, was a German, not an Anglo-Saxon prince, and that today she is fighting shoulder to shoulder with us to wipe out forever the last clinging despotism in the world—the same despotism against which we fought in 1776, and out of which Great Britain has evolved a democracy as free as our own. And now that tight little island is fighting the greatest fight and holding the longest battle line that the world has ever seen, and that line has not been broken yet, and it never will break! Don't let anybody tell you we are fighting Great Britain's battles. If we start off tomorrow and do fifty per cent as well as England has done in this war we will close the war in six months, as sure as there is a God in heaven!"

SUFFERINGS OF FRANCE.

He described the destruction of Belgium and northern France, and the cruelty and barbarism of the Germans toward women and children, and said:

"These things and many others that cannot be described

even in the company of men behind closed doors—these constitute German 'Kultur.' It is hard to believe these things because we have felt that modern Germany must be like the good Germans we have as fellow citizens. We forget that when Germany crushed out the revolution in 1848, she drove from Germany all her liberty-loving people and sent them over to us. She gave us the best blood that she had, and it has been a great contribution to us. Those who stayed behind in Germany are a polluted and perverted generation, with a philosophy that believes in cruelty, in war, and in the divine right of kings, and in the doctrine that any method is just—if it wins.

"The measure of any nation can be taken from the way that nation treats its women. The Kaiser himself has defined a German woman's sphere as confined to 'Church, children and kitchen.' There it is a wife's duty to revere, worship and obey her husband in everything. She has no individuality, no desire save his. No matter what he orders her to do she must do it thankfully and without question—for from one so high and sacred every command, no matter how humiliating the action ordered may be, has the sacredness of its source. So even blows or beatings are to be taken gladly; for is it not blasphemous to protest against the chastening of the Lord, and is not the German husband the Lord of his wife? So runs their philosophy.

"But his attitude was made worse by the German militarism. If a man was so superior to a woman, he became when an officer, a very god. To further the schemes of the military rulers and prepare the people for the crimes they are now committing, they were carefully taught that 'the uniform can do no wrong.' It did not matter what the officer in uniform did—once in it any action of his, no matter how despicable, shameful or wicked, became, if not exactly glorious, at least something to be neither resented nor criticized. So, if a woman got in his way or did not move quickly enough to suit him, a slap in the face or a vicious thrust with the hand sent her out into the gutter. Such blows by swaggering officers in the streets of Berlin and other cities were too common even to attract notice. No civilians' wife, daughter or sweetheart was safe from them, even when escorted by their men. It was 'the right of the uniform'—just a shade removed from the shameful old German 'right of the first night,' when military officers were privileged to take to their apartments any newly-wed peasant girl, returning her to her uncomplaining husband the next day.

"Certainly a nation whose philosophy permits it to hold its own women in such blasphemous contempt could not be expected to deal kindly or decently with the women of its enemies at war."

As illustrative of the spirit which holds the Frenchmen at their tasks, he told the following incident:

"In the great attack on Verdun there was only one road by which ammunition could be brought up, and the Germans found it out and began to shell the road, and the problem was how to carry 186,000 motor lorries with ammunition to hold the line. The Germans were ploughing up the road, and the cry went out for the old men. So all day long for three days, toward Verdun these old men swept and today they call it the Via Sacre—'The Sacred Way.' Twenty-eight thousand of them paid the price for that work, and all along that roadway are the crosses marking their graves—the graves of men above sixty-five who died for France in 1917. An American officer who had enlisted in the French army tells us that he was wounded and was waiting in a thicket for an ambulance. He tells us how it thrilled him to see one of these old men throw up his hands and begin to reel, and while he was reeling and going down to earth to stain the white dust of the Verdun roadway into a deep brown with his blood, he would shake his clenched fist toward the German line and cry: 'They shall not pass! They shall not pass!'"

And, contrasting the spirit of some of us, he said:

"The other day I had dinner at the home of a friend whose wife had caught the Hoover spirit. When she poured her husband's coffee she said to him: 'You can only have one spoonful of sugar this evening;' and he looked at her and

said: 'Bessie, war is hell, isn't it?' And yet you say we're sacrificing?"

He contrasted the work of the Canadians with some of us who, when we've done a little to help refuse to do more, as we've "knit our mitt and done our bit!" and the suffering of the Italians entrenched in the solid ice, with some of us who complained about heatless Mondays.

WE MUST KEEP FAITH.

The speaker in describing how our own boys are "carrying on" said:

"A story comes to us of one lad eighteen years of age, with his eye blown out, his face mutilated almost beyond recognition, his left shoulder torn off and a new bone being knitted in, his left hand to be useless forever. He was asked how old he was, and he said, 'Eighteen! I had a birthday since this happened. I was seventeen then.' In one of the first trench raids on November 20, when the Germans dropped in there, he knocked his opponent's gun out of his hands, and wanting to play fair like an Anglo-Saxon sportsman, he dropped his own gun and drew his knife—a seventeen year old boy fighting five thousand miles away from home in the dark and cold against a trained veteran of the German army and wanting to play square! A German officer leaned over his private's shoulder and blew out the boy's eye with a revolver, and then they dropped a shell in there and destroyed both his opponents and tore off the lad's shoulder, leaving him in black darkness until he became conscious in the hospital. When questioned, he said: 'I don't mind the shoulder so much because the shell that tore that off killed them two boches!' Then when he was told that he was to go home he cried, the tears stole down from that one eye, and he said: 'I cannot go! There ain't enough of us here now!' Mark the challenge that Germany made to the idealism of the Saxon youth. He said: 'Mister, have you seen what them boches do to women? We won't let them do that to our women! I have got to stay here until more of them come. I can still shoot with one eye!' Then when his attention was called to his left hand which was useless, with all the sweet naivete of a boy, he said: 'Don't you suppose that Mr. Edison or somebody could fix up some sort of a contraption so that I could hold a bayonet with one hand? I can't go back until the rest of them come!'

"That boy meant something more than that he must wait until America's khaki-clad hosts came to finish the job. He meant he must wait until the soul of America was thoroughly aroused, and until every one of America's one hundred million men, women and children consecrated every hour of every day to the one task of winning this war. It will profit us nothing to pick out the cream of our manhood and ask that they bare their breasts to the bullets of the foe, unless we also live in their hearts.

"Now what are we stay-at-homes going to do about it?

"It is a splendid thing that we invest out of our easily-earned surplusses in Liberty Bonds—the best investment on God's green earth; it is a splendid thing that we give to the Red Cross and the Y. M. C. A.; but that is nothing more than we have to do. We may do all this and send our boys out to fight with splendid equipment, guns and aircraft, and yet lose the war. The one thing absolutely necessary is food, and that is where you and I come in.

"In the second battle of Ypres, when the Canadians went across a mile and a half of open front, there were twelve thousand of them, and five out of every six Canadians dropped dead, and twelve out of every thirteen British dropped dead in those six days of battle. When they broke the first line some of these men were fighting with clubs, with rocks, with bare fists. They had only a few twisted bayonets, but they broke the German line and held it until reinforcements came up. They demonstrated that a man can fight without weapons if he has to.

"In the Somme valley there are 196,000 black crosses, the crosses of the first Prussian guard, broken by the British at the point of the bayonet when they did not have a cartridge in their belts; nor was there a shell behind the lines because

with their shelling the Germans prevented the ammunition being brought up; but they did it with cold steel and proved that a man can fight without ammunition if he has to.

"In Serbia they are still carrying on, although if a man is wounded on the battle front thirty miles away from Saloniki, he dies unless he can get back on his own feet, because they cannot spare the men to attend his wounds and carry him back. And they are proving that it is possible to fight without medical assistance.

"But no man can fight forty-eight hours without food. The situation is such that the United States and Canada have got to feed the Allies on the other side, and must continue to feed them during the war and for some years thereafter. They and we are sitting at a common table, and all they ask for the three years of fighting before we came is their honest share. May I ask you when you sit down to each meal of each day to say grace as follows:

"Here we gather, dear All-Father
Round Thy table to be fed.
'Tis Thy gift—our daily bread.

"As we gather to be fed
Nations plead for daily bread—
Fighting son and anguished mother,
Orphaned children—all together
Pray to Thee for daily bread,
At Thy common table, Father,
Ask we all for daily bread.

"God, All-Father, hear our prayer!
Move our hearts and minds to share
With Thy children at Thy table
This Thy gift of daily bread—
Sacred gift of daily bread!

"Lest they perish, swift and eager
Share we now our daily bread.
Give, through us, O great All-Father
To Thy children, daily bread!"

"There is not enough for them and for us. Who is going without it? The millions who sleep in Flanders field have pledged their lives that freedom may live. We have answered with our pledge that not only shall our millions sleep beside them if need be, but through our saving the still living shall be fed. Shall we keep the faith?

"In Flanders' fields the poppies blow
Between the crosses, row on row,
That mark our place; and in the sky
The larks still bravely singing fly,
Scarce heard amid the guns below!
We are the dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved—and now we lie
In Flanders' fields.

"Take up our quarrel with the foe!
To you from falling hands we throw
The torch—be yours to hold it high!
If ye break faith with us who die
We shall not sleep though poppies grow
In Flanders' fields!"

Mr. Milne read the following telegram from Herbert C. Hoover, U. S. Food Administrator:

"Please convey to Dairy, Food and Drug Officials' Congress, the gratitude and thanks expressed to me on recent trip to Europe by Food Administrators of Allied Nations to carry back to American people who have made possible by their voluntary and loyal efforts in food conservation the continued effective struggle of right against wrong. The successful end of this struggle is now assured if full support of our people is maintained, but any relaxation in this sup-

port can yet convert victory into defeat. I hope the members of this Congress of Dairy, Food and Drug Officials will use their large influence to help continue the necessary food aid to the Allies.

HERBERT HOOVER."

FIFTH SESSION.

Friday, August 30, 9:00 A. M.

PRESIDENT FOUST: We made the first order of business this morning acting on the amendments to the constitution, but it is now nearly 9:30 and they are not here, so we will go ahead with the paper on "Sanitary Control of Food Producing and Distributing Establishments," by Guy G. Frary, Food and Drug Commissioner, South Dakota.

MR. GUY G. FRARY: Mr. President, and members: I owe you all an apology for appearing here with the subject that was assigned first to Dr. Crumbine, but you will have to blame Secretary Newman rather than myself, and I hope you will not ascribe to me any selfish motives, because being a member of the executive committee I happen to appear on the program. Mr. Newman insisted that I take this place because of the fact that Dr. Crumbine was unable to come, but I assure you that my paper is not propounded along the same lines that I am, so it will bear somewhat the resemblance, possibly, to Dr. Crumbine that an egg substitute does to an egg. You know the labels on nearly all the egg substitutes say that you need use less shortening, so you will need to use less shortening.

THE SANITARY CONTROL OF FOOD PRODUCING AND DISTRIBUTING ESTABLISHMENTS.

By GUY G. FRARY,

Food and Drug Commissioner, South Dakota.

No doubt many of the members of this organization who have attended former conventions of the body wondered, in looking over the program, why a subject so common as to be almost trite should be before us for attention this year. At this time when our thoughts are properly centered on the successful prosecution of the war and our minds are accustomed to recording, almost daily, events of world-wide significance, it is increasingly difficult for us to concentrate interest on matters which, at the moment, we may consider have no bearing, or at best but slight bearing, on the war or present impelling needs. However, while we have taken from peaceful occupations and placed under arms to fight for world freedom some three millions of the best men on this round globe, we must not overlook the welfare of the ninety-seven millions of our citizens not under arms. We are a body of public employees chosen to enforce laws enacted for the well-being of the people of this country, and, though the war may bring added duties, we still must not fail in the performance of those functions assigned us as law enforcement officers.

The adulteration of food is not a thing of the past. The millennium is still far in the future and men have not forgot their cunning in contriving ways and means whereby the unsuspecting consumer, and indeed the cautious one, may be deceived. Adulteration may simply defraud the purse, or it may actually endanger health. To the majority of consumers, the word adulteration implies the presence of harmful substances; whereas, such an innocent thing as pure water has constituted and still often does constitute one of the commonest adulterants. It is with another class of adulterants that we have to deal, however, and these are the agents of disease dissemination. Microscopic in form, their detection is as difficult as their exclusion.

Sanitary control is intended to protect the public health and so may be considered in two phases, first the care of the health of the operatives in food-handling plants, and, second, the protection of the health of the consumer of foods produced in such plants. Measures effective for one condi-

tion operate to accomplish the other end desired. You cannot take proper precautions as to the health and working conditions of employees without at the same time affecting the quality of products shipped from the factory.

Three things are necessary if we are to exercise the needed sanitary control in the production and handling of food. There must be an adequate, enforceable law. There must be competent inspection backed up by fearless administration; and there must be favorable public sentiment represented by a co-operative public press. With these weapons results can be obtained anywhere. The law may well be worded in agreement with the model bill proposed several years ago by this body and now in force in several states. Failing to secure such a law, however, an added subdivision under the definition of adulteration in your food law, similar to that embodied in the food law of the state of Maine, can be effectively used. What this lacks in detail it makes up in comprehensiveness and the details may be left to regulations. But an effective law is absolutely necessary. Nothing permanent is accomplished by bluff.

In sanitary control as in most other lines of regulatory work the competent inspector is indispensable. He must be tactful, intelligent, possessed of keen powers of observation, and a liberal fund of good, wholesome common sense. The inspector must have no doubt as to the value and significance of exacting cleanliness and must realize that tiled walls and floors and elaborate fixtures do not prevent the contamination of food through the agency of diseased employees, but may even serve merely as a screen behind which hide some of the most inexcusable insanitary practices. Behind the inspector must stand his superior ready to back him up in the enforcement of the law and regulations. Nothing is so helpful to a good inspector's work as a letter from the office recalling to the mind of the offender the inspector's report and notifying him of the necessity for prompt compliance with the law. Don't let your inspectors' reports be filed without careful scrutiny.

Public opinion is a great asset in the enforcement of sanitary food control. Without it we are severely handicapped. Let the people know what you are doing and you will have them with you if you are conscientiously working to insure them clean and safe food. Public interest in hygiene and sanitation is undergoing a great awakening. The service rendered along the lines of factory sanitation by many large employers of labor is going to have a marked educational effect with the laboring class. Recognizing the value of sanitation in their own cases these people are going to demand the same or even greater care on the part of those persons engaged in the manufacture and distribution of their food. Coming fresh and clean from plants where ventilation, lighting, toilet facilities and personal cleanliness are all given their proper degree of credit in the attainment of maximum output, these workers are not going to be satisfied to purchase their food from a slovenly clerk or huckster. They are going to demand clean food, and food can reach the consumer clean only when it is prepared in a clean factory and distributed in clean containers by clean persons. To be considered also here is the influence exerted by the increasing number of classes in domestic science maintained in our schools and colleges all over this land. These classes are composed of girls and young women who are shortly going to be the food buyers of the nation. They are being instructed in food values, food economies and in food sanitation. They are being told the danger that lurks in milk handled by unclean hands and by persons who may be carriers of typhoid or diphtheria. They are being shown why they must make sure that the cooks they shall in the future employ must be free from all communicable disease, and are being taught why it is necessary that the factory from which their manufactured food comes must be conducted along strictly sanitary lines.

Then, most important of all factors now affecting this problem, is the army of millions of men who in training camp or at battle front are fast learning to appreciate the inestimable value of cleanliness in its fullest meaning in con-

nection with food. Among these millions there are now or soon will be some twenty thousand physicians who are receiving, as part of their training in the army, an intensive course in sanitation. Led by these medical men and a smaller number of expert food chemists and sanitarians, this vast army is coming back after the war to wield a powerful influence on all our social and economic life. Having learned the value of clean food these men will be content with nothing less for themselves and families in civil life, and it is up to those of us who are now engaged in the supervision of food manufacture and distribution to see well to it that nothing is left undone that will hasten the spread of the gospel of clean food made in clean plants, and delivered to the consumer under conditions which will insure its protection from contamination. (Applause.)

PRESIDENT FOUST: As soon as Dr. Alsberg comes in we will take up the order of business set for nine o'clock, acting on the amendments to the constitution. We will go down now to the next topic, the Round Table Conference, in which any commissioner may bring up any topic of interest with a view to finding out what has been done by the commissioners of other states, and that they may mutually be benefited by the exchange of ideas. If Dr. Barnhouse and Dr. Alsberg do not appear pretty soon we will go into the election of officers. Is there any question any commissioner would like to ask at this time?

MR. THOMAS HOLT: Mr. President, I would like to ask if any commissioner knows of any state having an egg law similar to ours. We have a law that is going to be difficult of enforcement. A bill has been passed and they have insisted on its enforcement, and it is almost impossible to enforce it under present conditions. The eggs have to be in cold storage 15 days. I heard there were several states that had such a law. I haven't heard of any state since I have been here passing any such law. In New York, I believe, they have a regulation or rule regarding eggs.

PRESIDENT FOUST: We have Mr. McKinley with us now, we will pass that for the present. We will hear from him on the subject of "Distinctive Names, Artificial Products, Imitation Products, Synthetic Products, Substitutes," Charles F. McKinley, Assistant Attorney General, Division of Foods and Dairies, Illinois.

MR. CHARLES F. MCKINLEY: Mr. President, I must apologize for not getting here earlier, but I have been having a few troubles of my own this last month, in the way of a political campaign going on in this town, as you may know, and between that and trying to make a living it keeps a man busy, so without any introduction I will just read the paper, as I understand the time is limited this morning.

DISTINCTIVE NAMES. ARTIFICIAL PRODUCTS, IMITATION PRODUCTS, SYNTHETIC PRODUCTS AND SUBSTITUTES.

BY CHARLES F. MCKINLEY,
Assistant Attorney General of Illinois, and Counsel for the
Food and Dairy Division of the Illinois Department
of Agriculture.

MR. PRESIDENT AND GENTLEMEN:

The subject which your committee has assigned to me for discussion is a most interesting one, but at the same time a rather complex one. "What should be the Food Commissioner's attitude regarding distinctive names, artificial products, imitation products, synthetic products and substitutes?" The mere statement of the subject shows that it opens up a broad field for discussion. In fact, I believe a large part of the discussions and contentions which have arisen in connection with the Food Laws have involved a construction of the law as applied to the products named. It is with some temerity therefore that I approach the subject, feeling that it is only too true, that sometimes fools rush in where angels fear to tread.

At first blush it would seem that the subject was to be discussed from the view point of the food law executive,

that is, whether he should regard such products as legitimate until shown to transgress some provision of the law, or whether he should take the position that all such products must be shown to be perfectly legitimate before they are entitled to enter the channels of trade. As I am not a food law executive, however, but am confined by the limitations of my office, namely, that of legal adviser to a food law executive, to construing the terms of the law and applying the same to given food products, I feel that this was not the phase of the subject of which it was intended I should treat.

The most profitable discussion for the time allowed will be to try and define the several terms, and point out the various provisions of the law and rules of construction applicable to them. And at the outset I wish it to be understood that what I say is merely by way of informal discussion and is not to be considered an authoritative pronouncement of the principles of law involved.

What is meant by the terms "distinctive names," "artificial products," "imitation products," "synthetic products," and "substitutes"? What does each include, and how do they differ from one another? These are rather difficult questions to answer. Since the enactment of the food laws in this country and the administration of them by the various officials, there have come into current use in food control circles quite well defined meanings for many words and phrases which will not be found in the dictionaries. Some are quite definite and limited, while others are somewhat loose and vague. For this reason we cannot altogether rely upon the lexicographers in defining words and terms used in connection with the food laws. Furthermore, there will be found no clear demarcation between the several terms enumerated in my text. For example, most imitations are substitutes, but all substitutes are not imitations. Some articles sold under distinctive names are substitutes, but others are not. For these reasons I shall not attempt any hard and fast definitions for the several terms, but will try to describe the characteristics and general nature of each.

DISTINCTIVE NAMES.

The term "distinctive names" has come into current use in food control and food producing circles by virtue of the fact that it is used in the provisions concerning misbranding in the Federal food law and the laws of many states. As the provisions of the Federal Food and Drug Act are typical in this regard, I shall make reference to that law.

Section 8 of the Federal law is the one defining misbranded food and drugs. As applied to food, it declares, in substance, that a food shall be deemed to be misbranded, first, if it be an imitation of or offered for sale under the distinctive name of another article; second, if it be labeled or branded so as to deceive or mislead the purchaser; third, if in package form, the quantity of the contents be not plainly and conspicuously marked on the outside of the package in terms of weight, measure or numerical count. (Note: I have not given the details of the above three paragraphs.)

The fourth paragraph of Section 8 is in part as follows:

"Fourth. If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: Provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

First. In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, *under their own distinctive names*, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced." The second clause of the proviso relates to compounds, imitations and blends, labeled or branded as such, and is not material to this discussion. The first clause of the above proviso is the origin and basis of the so-called distinctive name doctrine.

As to just what is comprehended within the term "distinctive

tive name," has been the occasion of considerable debate and the basis of some litigation in the courts. After considerable investigation I have come to the conclusion that the best definition of the term has been given in the regulations for the enforcement of the Food and Drug Act, adopted by the secretaries of the Departments of Agriculture, Treasury and of Commerce and Labor. The first paragraph of regulation 20 is as follows: "A distinctive name is a trade, arbitrary or fancy name which clearly distinguishes a food product, mixture or compound from any other food product, mixture or compound." The substance of this definition has been adopted by the courts in a number of cases in the Federal courts, and so far as I know is generally accepted as authoritative.

Regulation 20 to which I have just referred, contains a number of rules governing distinctive names, which I wish to refer to in their order. The first rule prescribes that a distinctive name shall not be one representing any single constituent of a mixture or compound. The application of this rule has never been quite clear to me. It evidently was intended to prevent the incorporation in a distinctive name, of the name of one ingredient while excluding the others. Such a name would seem to be misleading, since it would lead the purchaser to believe that the product was composed of the product named. For example, suppose a breakfast food be composed of wheat and corn, and it be called "Wheatola." I think this name would violate the rule because the name of the wheat entering into the mixture is used, while the name of the corn is not. I have been unable to find any court decision in which this rule is expressly construed.

As to whether this rule should be applied where other substances are added to a staple food as condiments, or in a small amount to give it flavor or relish, I would be inclined to think it should not. Suppose, for example, to a base of wheat we add small quantities of nuts, raisins, sugar and salt and call the mixture "Wheatola." I fail to see wherein there is anything misleading about the name. In my opinion it is a question of fact to be determined in each case, where the distinctive name selected for an article tends to deceive, or leads the purchaser to believe that the article consists entirely of the one featured in the name.

It has been contended that a distinctive name under which a mixture or compound may be sold must, in its entirety, be purely arbitrary or fanciful, and must not contain the name of the component parts of the compound. This contention was rejected by the Attorney General of the United States in his Canadian Club Whiskey opinion, and I believe is the better view.

The other rules I have referred to provide that a distinctive name shall not misrepresent any property or quality of a mixture or compound; and that a distinctive name shall give no false indication of origin, character, or place of manufacture, nor lead the purchaser to suppose that it is any other food or drug product. These rules are self-explanatory and are tantamount to saying that the name shall not be false or misleading in any particular.

A very important question to be kept in view in this discussion is the purpose which the law makers had in view when they inserted this proviso concerning distinctive names in the misbranding section of the law. From a careful reading of the entire section and of the court decisions construing the same, it seems to have been their purpose to exempt compound foods, labeled with a distinctive name, from stating upon the label the names of the ingredients contained therein. This view is supported by the decisions of the Federal courts, *U. S. v. Corno Horse and Mule Feed*, 188 Fed. 453, *U. S. v. 150 cases Fruit Pudding*, 211 Fed. 360.

The question then naturally arises, to what extent are products labeled with the distinctive names absolved from complying with the various requirements concerning branding contained in the misbranding section? It seems to me, as I have already stated, that the only immunity extended to compound foods bearing distinctive names is that the names of the ingredients need not be stated. Any other construction would produce an absurdity. Suppose a product bore a

distinctive name and at the same time the label contained false and misleading statements. Would it be reasonable to hold that the product was not misbranded? And yet this very contention was made in one case in the Federal courts. However, it was promptly overruled. *U. S. v. 150 cases Fruit Pudding*, 211 Fed. 360.

It seems to be the rule, therefore, that products labeled with a distinctive name must comply with all the requirements of the misbranding section concerning (a) false and misleading statements, (b) the sale of an article as an imitation of or under the distinctive name of another article, and (c) the net weight clause. See also *U. S. v. 300 cases Mapeline*, Dist. Court N. D. Ill.

The fact that a food is labeled with a distinctive name is not sufficient, in my opinion, to relieve it from bearing upon the label any statements which may be required in special provisions of the law which are not contained in the misbranding section. Some states have special provisions concerning branding aside from the general misbranding provisions and these I believe must be complied with even in the case of foods bearing distinctive names.

This reference to special provisions concerning branding makes it pertinent to refer to a recent case which, it seems to me, has a very material bearing upon the distinctive name doctrine. I refer to the case of *Hebe vs. Calvert*, decided by the Federal Court for the Ohio District (246 Fed. 711). From the report of this case it appears that the product in question was put up in cans labeled as follows:

HEBE
A COMPOUND OF EVAPORATED
SKIMMED MILK AND VEGETABLE FAT
CONTAINS 6% VEGETABLE FAT
24% SOLIDS

FOR COFFEE AND CEREALS
FOR BAKING AND COOKING

The Food Commissioner of Ohio notified the Hebe Co. that he considered the product illegal and that its continued sale would result in prosecution. The Hebe Co. thereupon applied to the Federal court for an injunction restraining the commissioner for instituting proceedings against it.

It will be observed that the product not only bears a distinctive name but the label states it is a compound of certain ingredients, giving the proportion of each. It seems to have been the contention of the commissioner that the product was in point of fact a condensed milk or was being sold as condensed milk, in violation of a special statute. This statute provides in substance that whoever manufactures, sells, exchanges, exposes or offers for sale or exchange, condensed milk unless it has been made from pure, clean, fresh, healthy, unadulterated and wholesome milk, from which the cream has not been removed and in which the proportion of milk solids shall be the equivalent of twelve per cent of milk solids being fat, and unless the package, can or vessel containing it is distinctly labeled, stamped or marked with its true name and brand, shall be subject to a fine.

Another provision of the Ohio Food Law, and one enacted at an earlier date, provides in substance, that a food shall be misbranded, if it is labeled so as to deceive or mislead the purchaser, or if the label on the package containing the food bears a statement regarding such food which is false or misleading in any particular; provided, however, that the section shall not apply to mixtures or compounds recognized as ordinary articles or ingredients of articles of food or drink, if each package sold or offered for sale is distinctly labeled as a mixture or compound, with the name and percentage of each ingredient therein. Detailed provision is made concerning the lettering on the label. This last provision is similar in terms to the provisions in other states concerning compound foods. As far as I have been able to find there is no express provision in the Ohio food laws concerning foods sold under distinctive names. It is plain that the product in question complied with the last cited provision of

the law relating to branding. It was not, however, made of whole milk.

The constitutionality of a state statute being involved, three judges of the Federal Court heard the case, and after full hearing refused to grant an injunction. I think the gist of the court's opinion is contained in the following extract:

"When the Legislature came to the enactment of Section 13 (the special act in question) for the purpose of regulating the manufacture and sale of condensed milk, it knew that within legal limitations compound foods were permissible, and recognized, as appears by necessary implication from the section itself, that an article might, as the law then stood, be made and marketed as condensed milk (if such had not already been done), which was not made from whole or natural milk. It is declared, to the exclusion of skimmed or any other form of adulterated milk and of any and all mixtures and compounds in which such milk is an ingredient, that there should be one kind of condensed milk, and that it should be made of pure, clean, fresh, healthy, unadulterated, wholesome, standard milk. Its purpose is to secure to the population, adult and infant, wholesome condensed milk of a certain standard of strength and purity. It is the conception of the law that condensed milk made from milk below the prescribed standard is not wholesome."

The court seems to have recognized the well-known rule of statutory construction that statutes relating to the same subject matter should be so construed that if possible each shall be allowed to stand and be given its intended effect. The opinion states that within legal limitations compound foods are permissible, but that any form of condensed milk is an exception to be governed by the special statute relating thereto. Under this construction the chief question for the court to determine was whether the product Hebe was in fact a condensed milk. From the evidence adduced, the court held it was.

Of course the question of the product being sold under a distinctive name was not expressly in issue, since there was no basis therefor under the Ohio statute; but it should be observed that in those states in which the distinctive name is recognized it is grouped with mixtures and compounds in a proviso or saving clause to the misbranding provisions. The reasoning of the Court as applied to mixtures would seem to apply to distinctive names as well, so that if its decision is upheld upon appeal it may have a far reaching effect upon distinctive names.

While not perhaps germane to this paper, it might be pointed out, in passing, that the court sustained the validity of the special statute referred to as a valid exercise of the police power of the State. It was not contended that there was anything deleterious or injurious to health in the product, or that it was unwholesome, except in the sense that it was not as nutritious as if made from whole milk. Yet the court upheld the statute prohibiting its sale irrespective of the manner of branding the package. This case goes much further than any recent case in this regard, and there seems to be grave doubt whether the opinion will be concurred in by the Supreme Court to which an appeal has been taken.

The cases in which the courts have sustained the right of the Legislature to prohibit the sale of an article of food which is not unwholesome are those in which it appears that there has been an element of fraud or deception upon the purchaser. This was true in the case of the *People v. Henning*, 260 Ill. 554, where it was held that the Legislature had the right to prohibit the sale of vinegar made from molasses which had intentionally been made in imitation of cider vinegar.

In the Hebe case, the court holds that the Legislature had in effect declared any form of condensed milk not made from whole and unadulterated milk to be unwholesome; that since there was room for reasonable men to differ on the subject, the courts would not interfere. I think the court fell into error in not distinguishing between the terms wholesome and nutritious. Whether an article is wholesome or not has repeatedly been held within the power of the Legislature to decide. *People vs. Price*, 257, Ill. 595. But to say

that the Legislature has the right to prohibit the sale of an article of food which is not claimed to be unwholesome, merely because it is not as nutritious as some other article, is very doubtful to say the least, assuming of course that the product is branded to show its true character.

It is to be noted that in this case, however, the court found from the evidence that the product was frequently represented and sold as condensed milk. The court lays considerable stress on this feature of the case and was admittedly influenced to a great extent by this charge of fraud. The case, therefore, does not turn wholly upon the label and the application of the statutes thereto.

Having devoted so much space to this branch of my subject, I shall have to be rather brief in the treatment of the balance.

ARTIFICIAL AND IMITATION PRODUCTS.

The terms "artificial" and "imitation" are used almost interchangeably in everyday life, so that they have come to have almost a synonymous meaning. It is hardly necessary to define the word imitation. As applied to food products, I think the word imitation implies, at least in its legal sense, a conscious effort to produce an article resembling some genuine article of food well known under a particular name. The resemblance may be in appearance, taste, smell, qualities or effect it is intended to produce. In the eyes of the law an imitation is one that may easily pass in the place of the genuine.

As to the term "artificial," I consulted the Standard Dictionary and found the following definitions:

1. "Produced or composed by art rather than by nature, but of the same materials, and with the same or nearly the same results; manufactured; distinguished from imitation as artificial rubies (real rubies produced chemically), artificial ice."

2. "Produced by art to imitate nature, and with an inferior result; imitation, as artificial flowers."

Other dictionaries give substantially the same definitions given above. I think the first is the more accurate, namely: something produced by art rather than by nature, but of the same materials and with the same or nearly the same result. As applied to food products, it would seem that artificial as thus defined is not an appropriate term. The term "imitation" has obtained a fixed and well defined meaning in food control literature and is to be preferred over the term "artificial." It is not only well recognized in statutes and court decisions but I think it conveys much more information to the purchaser of the product. For these reasons it seems to me the use of the word "artificial" should be discouraged and the word "imitation" used to describe all products not genuine.

SYNTHETIC PRODUCTS.

A synthetic product I understand to be one that has been made up from several elements or ingredients by means of a chemical combination. I think they refer chiefly to flavoring materials and products of that character, produced by laboratory methods. They may be labeled with a distinctive name, or as an imitation of a particular product, or as composed of certain principles or ingredients, depending upon the requirements of the statutes of the various states.

SUBSTITUTES.

A substitute product would be one intended to take the place and serve the purpose of some other recognized product or products. A substitute may or may not be an imitation of the product in place of which it is to be used, depending upon its appearance and other qualities of resemblance. There can be no objection to labeling a substitute with a distinctive name or as a compound, providing there is not a conscious imitation with the intent or effect of deceiving the purchaser.

PRINCIPLES TO BE APPLIED.

I think it is the policy of the law to permit the sale of any wholesome food product which is properly branded. But since all of the food products coming within the classes named are complex in their nature as distinguished from the simple or natural food products, and the public is therefore

less able to judge of their qualities and to guard against fraud, it is essential that they be given careful scrutiny both as to labels and as to ingredients. All of these products, with the exception of a few sold under distinctive names, are products which are produced commercially and designed to a great extent to take the place of some other products. Most of them are artificial in the sense that they are not simple or natural goods, and all have ingredients which are arbitrarily determined. I do not wish to be understood as saying that these products should be regarded with suspicion until they have established a clean bill of health, but I think the interests of the consumers as well as the honest manufacturers and dealers warrant the vigilance of the Food Commissioner to prevent the circulation of fraudulent and unwholesome products.

In the investigation and consideration of all such products, I think the following general principles might be applied:

1. The product should be wholesome and free from all deleterious substances.
2. The label should truthfully state all matters required by law, and should not in any manner be false or tend to mislead or deceive.
3. If the product be not a food staple, but a flavor, condiment or leavening agent, it should be reasonably calculated to produce the result claimed.
4. If a substitute for some staple food, the label taken in connection with the appearance of the article should not tend to deceive or lead the purchaser to believe it is some other article.

I realize that there are many interesting points which I have not developed, but to do full justice to the subject would require this entire session. I trust I have presented something worthy of your attention and consideration, and afforded a basis for an interesting discussion.

PRESIDENT FOUST: Is Commissioner Barnhouse here? (Not present.) Is Dr. Garner here? (Not present.) Is Mr. L. M. Tolman here? (Not present.) We will take a few minutes if anyone desires to take the floor for the discussion of this paper.

MR. R. E. ROSE: I wish simply to say, Mr. President, that the paper was an exceedingly valuable one, and I hope it will soon be published in the Proceedings, in order that we may all get the benefit of it.

SANITARY CONTROL OF FOOD MANUFACTURING PLANTS.

By L. M. TOLMAN,

Former Chief of the Central Inspection District, Federal Bureau of Chemistry, Chicago, Ill.

L. M. TOLMAN: Mr. President and gentlemen: There are at least two standpoints from which this subject of sanitary control of food manufacturing plants may be discussed: one from the standpoint of control of disease distribution, and, second, from the standpoint of the prevention of spoilage and loss of food value through improper handling, and it is from this latter standpoint that I am going to direct my discussion.

Cleanliness is next to Godliness in the manufacture of all food products, not only from the standpoint of decency, but also from the standpoint of business efficiency, that is, in the prevention of loss by spoilage, which is a very material and important question in the handling of all food products. By cleanliness, I mean not only the superficial cleaning, but that real cleanliness which prevents bacterial infections and removes bacterial contamination as well as the more apparent dirt. Keeping qualities of foods, especially such foods as meats and similar products, is a most important factor in their value, and we know that some products keep much better than others of the same general character, some manufacturers' products keep better than other manufacturers' products of the same kind, and I believe that in many cases, a study of the fundamental facts would show that the rela-

tive keeping qualities is dependent, to a large extent, on cleanliness and sanitation in the methods of handling the products. Of course, I do not mean to indicate that a product does not have to be properly handled after manufacture, but it is the initial contamination of a product brought about in its manufacture that has the most to do with its future keeping qualities, and it is upon the subject of what really constitutes cleanliness that I desire to enlarge to a certain degree at this time.

For instance, in order to illustrate what I mean by cleanliness, I am going to give two or three concrete illustrations. I think the most striking illustration, perhaps, that has been given publicity in the last few years is the work of Dr. Chas. E. North, of the New York Milk Commission, on clean milk. Many of you heard him last year at Atlantic City in his very striking address on that subject. And along with this I would not forget the work of the Bureau of Animal Industry on clean milk, and especially their work on the vital necessity of sterilization of milk cans and other utensils used on the farms. The point which I got from Dr. North's lecture and from his work and from the work of the Bureau of Animal Industry, and my own experience in connection with the study of milk supplies of various cities, while I was connected with the Bureau of Chemistry, U. S. Department of Agriculture, is that you cannot produce clean milk by what are known as ordinary methods of cleanliness, such as washing, scrubbing, and rinsing of the utensils used in the handling of milk, but that it is absolutely essential that these utensils be sterilized. Every utensil which comes in contact with the milk from the time of milking to its final delivery, should be sterilized in order to produce a milk which has satisfactory keeping qualities as well as a milk which is sanitariously clean.

The necessity of sterilizing of utensils used in the handling of foods was never so strongly impressed upon me as it was during the work done two years ago under my supervision in the study of milk supply at St. Louis, where we compared milk handling in the ordinary way in a good, clean dairy with milk handled in the same way, but the buckets, pails and cans sterilized. The result was most astounding as regards the keeping qualities of the milk handled in the sterilized containers. We found, as a matter of fact, that the unsterilized containers, even though they had been washed, contained such large numbers of bacteria that the milk placed in them received a large immediate contamination that the speed of decomposition was tremendously increased. This is true, in my judgment, as regards the handling of any similar food product, and that many losses by spoilage of such easily decomposed foods as milk could be overcome by sterilization of machinery and other pieces of apparatus coming in contact with the product at various stages of its manufacture. It is also true from the experience of manufacturers that products which have begun to spoil or deteriorate are very difficult to properly preserve afterwards. This has been emphasized in a number of reports; for instance, Dr. Biting of the National Canners Laboratory called attention to the fact that peas which had been allowed to become infected in the fields or had become sour in the handling were much more difficult to sterilize in the future canning operations and spoilage occurred although the processing given to them was sufficient to properly sterilize clean and sound peas. I think this is more or less an experience with all food products, that products which have begun to spoil are more likely to spoil even if they are to be canned and processed later.

Another illustration of the point which I have in view in connection with this discussion was brought to my attention in some investigation carried on several years ago while I was connected with the Bureau of Chemistry, in connection with the manufacture of edible gelatine. In one plant we found that the finished product was badly infected and much deteriorated and more or less decomposed, and yet the utmost efforts had been made to keep the plant clean and sanitary, but a study of the situation showed that the real source of trouble in this particular case was the use of the water for

washing the knives and spraying the gelatine slabs while they were cut into thin layers to be placed on the drying frame. We found that the water was badly contaminated and was, as a matter of fact, inoculating the gelatine so that while it was drying on the frames a very material growth of bacteria took place and the product was very materially decreased in value as an edible gelatine, and while the water appeared from the ordinary standpoint to be a pure, clean water, bacteriological tests of this water showed conclusively that this was the source of trouble and that the finished product could not be called a clean product because it had come in contact with the water which may be called dirty.

In many instances in the study of the handling of food products, we have been able to find by going back over the various steps in the handling of the product that in some particular point, a bacterial infection was being imparted to the food and was the cause of the future lack of keeping qualities and that the remedy in most cases was extremely simple. I remember in connection with this same gelatine investigation mentioned above, in another factory we found by taking samples of the gelatine from its first stage of manufacture through each operation that there was one point where a large cock was so arranged that a small amount of gelatine remained in it in spite of the washing. This gelatine remained here at a warm temperature between the operations, two or three hours, and enormous quantities of bacteria developed and contaminated the next run so seriously that at times the gelatine would liquify upon the drying trays. This was eliminated by simply steaming out the cock after each operation.

I could go on and illustrate by a number of similar experiences that have come to me in the course of my experience, but the point which I desire to impress particularly at this time is the necessity of scientifically going after the manufacturing operation, studying it from the beginning to end, and I am sure that you will find the science of bacteriology a most tremendous help in the study of these problems, in that it is a most sensitive indicator of the points where trouble is likely to develop and a tremendous amount of time and energy is often wasted because of the fact that a systematic study has not been made in this way to determine the actual point where the trouble arises and eliminate it. There is a tremendous field of operation for trained workers to do along this line of the sanitary control of good manufacturing, particularly from this standpoint of the prevention of spoilage, and at this time everything should be done to prevent spoiling, as it means loss of food both as regards quality and quantity.

DISCUSSION ON THE ADOPTION OF AMENDMENTS TO THE CONSTITUTION RESUMED.

PRESIDENT FOUST: We will take up the discussion of this paper later on, and will now go back to the order of business fixed yesterday, the adoption of the amendments to the constitution and by-laws. After this is over we will take up Dr. Barnhouse's paper, which is the first on the program for today. I am going to rule without any motions or debate, that Dr. Alsberg will read the first amendment. When a resolution is read we will refer it to the committee. The resolution goes to the committee without debate. I am going to ask Dr. Alsberg to read the first amendment. If there is no objection we will just pass it till we get down to the end. If there are no changes we will take a vote on the amendments as a whole. After the first one is read it will be considered as adopted, though not adopted, until we get down to the last one, and after the last one is disposed of there will be some changes. We will then take a ballot or viva voce vote by states in adopting them as a whole.

(Dr. Alsberg read the first amendment.)

PRESIDENT FOUST: If there is no objection to this one, take up the next.

(Dr. Alsberg read the second.)

PRESIDENT FOUST: Any objections to this? If not, we will take up the next.

(Dr. Alsberg read the next one.)

PRESIDENT FOUST: Any objections? If not, we will take up the next.

(Dr. Alsberg read the next one.)

PRESIDENT FOUST: Any objections?

MR. B. L. PURCELL: Mr. President, I rise to a point of order. I do not quite understand. Are these to be just read and acted upon immediately afterwards?

PRESIDENT FOUST: If there are any objections, now is the time to raise them or the amendment read will be considered as adopted, although it is not adopted till a vote is taken on it, to make it legal.

DR. CARL L. ALSBERG: I would suggest, Mr. President, with Commissioner Purcell's permission, that to intelligently discuss the amendment I just read, I think it is necessary to have before the Association the final amendment which deals with votes to be given to such city representatives.

PRESIDENT FOUST: We will read that in connection with the one just read.

DR. CARL L. ALSBERG: I would suggest if it is agreeable to you that the two be considered together. They are essentially one.

PRESIDENT FOUST: Yes.

(Dr. Alsberg read amendment to Article 11.)

PRESIDENT FOUST: Any objections to this one?

MR. B. L. PURCELL: Mr. President and members of the Association: I think we ought to consider this suggested amendment most carefully. We should realize its full meaning, and that it may change the fundamental ideas and purposes for which this organization was created. We know that the local health departments or municipal departments in control of food and drugs located in any state may so dominate a convention that the 44 commissioners, if every commissioner were present from the several states, would be in a decided minority, so far as numbers go.

It will not answer the question to say that they have but one-third of the vote of the state. We are all controlled to a greater or less degree by the prevailing sentiment of any public gathering, and I want to caution that this amendment to a very large extent in my opinion is placing the state officials who were responsible for this organization in a, I may say, inferior position, and I am opposed to the proposition to give the various municipalities of this country an equal vote—when I say equal I say it advisedly—with the state officials. I am in earnest accord to extend the privileges of membership and all that that carries with it, to the municipal officers charged with supervision of dairy, food and drug products of their localities, but I think they should be admitted with a very much more limited voting authority than is provided for in the report of this committee. I therefore suggest that, as a substitute which I will be glad to provide in writing later on, the municipal officers charged with the supervision of the dairy, food and drug products of their several communities be associate members of this organization with the privilege of participating in the debates and proceedings of the convention, but that they have no vote in the election of officers or matters pertaining to the general policies of this association.

SECRETARY NEWMAN: Mr. President, supplementing the commissioner's remarks, I would like to call your attention to the subject from another viewpoint. Some of you can take yourselves back to Denver or the east when we attempted to vote on amendments. You are going to vote. The commissioners vote two votes, the city delegates get out and caucus to cast that other vote. You will be voting here all next month on the proceedings of this convention if you have that regulation in force. Again, you know how we vote by ballot. How are you going to discriminate unless you separate the city fellows off here and divide their yeas and nays by three, or group them off by states.

MR. R. E. ROSE: Mr. Chairman, I want to say I am heartily in favor of the report of the committee. I remember Denver very distinctly. I remember how we voted at Denver, that each state had to get up and not only cast its ballot, but plainly state what the ballot was. I don't see any

difficulty in the voting being yea or nay by ballot. When a state is called, let the delegates vote, and when the city comes into the organization they have one vote and the states have two votes. Nothing was said about how that ballot was, they were simply called up. The states' votes are recorded, the city organizations or other municipal organizations are called up and their vote is cast.

I believe in co-operation at all times. Last night's entertainment here shows the necessity of the co-ordination, not only of this organization but of many others. We have now a co-ordination of counties. The larger portion shown upon that map is co-ordinating and co-operating and I believe that every one of our food officials, municipal and otherwise, should be in this organization. Take the city of Chicago with three million people. The state of Florida has got three votes here, and she has only got a million people in the whole state. I believe in representation. I think the committee have devised a very reasonable method of giving to other organizations a vote in this food control convention. I believe, however, that the constitutional provisions that votes on this kind of a proposition, affecting the organization, should be by ballot, and that the states should not get up and say how they vote, yea nor nay, they should be called, and deposit their ballot. We recognize what the conditions were in Denver, and how that ballot was changed because the state had to announce outright how she voted.

PRESIDENT FOUST: I think it would be a pretty good idea to take a vote on this amendment just the way it stands. The state has three votes, and if there are fifty cities represented in Pennsylvania and each city has a representative present at our meeting, then the state has one vote for each city represented and then 53 votes.

MR. R. E. ROSE: Not under this recommendation. The cities represented have one vote, and where there were several cities represented they would get together and see how that vote should be cast.

PRESIDENT FOUST: My suggestion would eliminate that. A state would have an additional vote for each city represented.

MR. B. L. PURCELL: What if all the cities represented didn't agree?

MR. R. E. ROSE: Then there would be no vote.

MR. B. L. PURCELL: There is no provision for that.

MR. R. E. ROSE: It says that they must. It gives them the right to one vote.

MR. A. M. G. SOULE: Mr. Chairman, partly for my information and partly for consideration of the article as presented by the committee, I would like to inquire if the situation has been provided for, which might arise, that several cities in a state might be represented and the state not officially represented. Has that situation been provided for?

DR. CARL L. ALSBERG: I think the committee had in mind that situation. What the committee had in mind was that all the cities in the state would under no circumstances that might arise have more than one vote. If the state department was not represented, then that state department only would have one vote, whereas at the present time if the state department is not represented it has no vote.

MR. R. E. ROSE: Excuse me, Doctor, I understood you to say that the state had three votes.

DR. CARL L. ALSBERG: I merely meant to indicate, Mr. Rose, that I assume this is what is to occur, that in case the commissioner did not come himself, sent no one to act in his place and sent in no proxies, and a city or group of cities did come, then the intent of the committee was—possibly the language needs a change—that those cities whether the commissioner or his representative be present or not, would have one vote, but not the three votes which the state would otherwise have if the state department represented them. That was the intention.

May I say another word? May I beg of this meeting here not to bother so much about the particular language of this amendment? The committee met last night, the committee was very tired, it had a long session, we were all late at the banquet, and I dare say that the language which we con-

cocted is not the best, and that undoubtedly an improvement can be made. Commissioner Frary has pointed out to me one point which isn't entirely clear and which ought to be improved. Dr. Frear has made a similar suggestion which strikes me as being reasonable. Let us confine ourselves to settling the principles involved at this time, and let us leave out of consideration for the present at any rate, whether this is the best possible way to have the states represented. There are many ways in which we can handle the situation which was discussed in the meeting yesterday. The committee held that the vote which was taken on Mr. Abbott's motion with specific instructions for the committee to provide full membership for city officials was to enfranchise in some manner, because without the franchise there can not be full membership. You so understood that motion. The only thing that remained for the committee to do was to express in suitable language what you understood to be the will of the association as expressed in the passage of the motion which Mr. Abbott made yesterday, and in addition to indicate the nature of the franchise which should be given the city officials. There are a good many ways in which that can be done. We can give the city officials without restriction the same authority and franchise that the state departments have, we can give each city a vote without limitation, but when you carry out the suggestion made by our president, that commissioners of the state department have three votes and an additional vote for every city from that state voting, the committee considered that would not be entirely equitable for the reason that a state like New York or Pennsylvania or Massachusetts which may have twenty or thirty or forty cities might have 103, let us say, whereas a state such as that represented by Mr. Rose might only have five or six votes under the most favorable circumstances. It was for that reason that the committee did not consider favorably our president's suggestion.

One might tackle the matter in another way. We might say, this was a suggestion made by our secretary, I believe, that whenever a city reaches in population the size of our least populous state, whatever that may be—I take it we have some states like Arizona and Nevada, which have perhaps one hundred or one hundred and fifty thousand inhabitants in the entire state—a city of that population might be given a vote to be placed on a par with the least populated state of the Association.

Or, we might take another position. We might say that any city with a population of a million or a half a million would have a vote, and that the other states should only have the privileges of associate membership.

There are many ways of doing the matter. I think we should settle first the question whether this is the best way to do it. Do you want to enfranchise in some manner the city officials? That was taken up yesterday on Mr. Abbott's motion, and I think we ought to get it clearly settled, then the difficulties which have been suggested, would arise on this caucus proposition.

MR. B. L. PURCELL: I May I interrupt you just a moment?

DR. CARL L. ALSBERG: Certainly.

MR. B. L. PURCELL: What would be the effect of the adoption of this proposed amendment now?

DR. CARL L. ALSBERG: It would mean it would go into our constitution and it would be there for the next two years. If it is the purpose to try it out I want to withdraw every objection I have urged and I am satisfied some of the other gentlemen who voted to re-commit that report to your committee, did it under a misapprehension as to the directions given. I for one, and I have heard five other gentlemen say that they had no intention or thought that we were being directed to bring for the consideration of the Association an amendment which would enfranchise entirely the city officials, but rather that you would bring in some suggestion or amendment which would make them, if they desire to become so on our very cordial invitation, become members of some kind. Commissioner Jackson and I felt that we had gotten instructions along this line. I would not have submitted this thing as a trial proposition. I am simply sug-

gesting a manner of cutting short the discussion. Let us not go into a discussion of the phraseology at this time, but let us decide if we can whether we want to give them any kind of a franchise. We thought that was decided yesterday; we were so instructed, we thought, and acted accordingly. If we are wrong in our understanding the proper action to take is to move to reconsider, I think, because the amendment we brought in originally was identical with the suggestion made, that such gentlemen as our city officials be given the privileges of associate membership.

MR. GUY G. FRARY: Mr. Chairman, following the last annual meeting, or the second last, Mr. Abbott wrote to all of us asking our opinion concerning the advisability of admitting to membership in this Association representatives of cities. At that time I answered the letter expressing myself as being in favor of admitting to membership representatives of cities. I felt that I could not do otherwise, representing as I do a state with a population of some six or seven hundred thousand people, which population is only about one-fourth that of the city of Chicago, for instance. Why should South Dakota be represented in an Association of this character and the city of Chicago, with four times the population, four times the consuming public just as vitally interested in food as South Dakota, not be represented? I still feel somewhat and entirely in the same way. I have the greatest respect for the founders of this organization, for Mr. Flanders, for Professor Ladd, and those others who have been in this work for a number of years, and I think that one of the broadest, grandest and best duties that this Association has performed has been, first, the development of laws within the various states, then the development of the National Food and Drugs Act, and lastly the widespread development of cooperation between the administrative officers and the different states and the federal government. It has been said that the men in charge of the enforcement of the city ordinances are inexperienced, that there is a wide divergence in the wording and sometimes in the purpose of the city ordinances. That no doubt is the case. Cannot this Association well step in here, open its membership to the men from these cities and possibly be the means of bringing about a great improvement in these city ordinances, in educating the men who are enforcing these ordinances, and thereby perform for the cities the same function it has so well performed for the various states?

I believe our committee has worked out this matter of voting in a very satisfactory manner. I cannot conceive of any way whereby representatives of the cities, should they ever be so minded, which I think they will not, can gain control of this convention. I think we as representatives of the state and federal department should not set ourselves on a little pedestal and spin ourselves about as the only men to be considered in the matter of dairy, food and drug control. Let us get all the information we can, and if there are able men in the city department who have ideas, and there are, let us get those men in here and get their ideas. Let us make our Association as powerful as we can make it. One of the ways to make it powerful is to get in a large membership and give them representation which they will appreciate and encourage them to come and take part in our deliberations and give us the benefit of their experience, and possibly they at the same time can profit from our experience. I of a great many. It is true, I understand, with Mr. Allen, who represents Washington, and Mr. Rose. Since we were sent back to report the amendment, the committee all underam in favor of this amendment. I do think it ought to be edited. I am in favor of the amendment with proper editing.

MR. F. L. WOODWORTH: Mr. Chairman, I think the presentation of this resolution is very vital at this time. The development of this war situation and the problems that will come after the war are going to bring about the casting out of a great many things that are nonessential, of many institutions that are not covering the ground for which they are created. It seems to me it is vital to this Association at this time to make sure that for the future at least it should really represent the food and drug control officials of this United

States of America, and it is up to us right now to make that move. We are growing more and more each year an association of state officials, and when we come to compare the food and drug work of this country as it is done today, with the work that is being done by state officials alone, we can readily see that this Association is likely to become a sort of selective institution and the great body of food and drug control officials won't be represented at all, and our organization will inevitably sooner or later split into a sidetrack and the great movement will go on without us.

We all think a great deal of this institution, and we want it to really represent the food and drug control officials in this country. There is just one way to do it, and that is make it really a meeting of the food and drug control officials. There are states in this country in which—I think of one—we have cities where a stronger, more active department than the state department exists. And it isn't fair to that state that those active organizations should not be represented here. It is not fair to this organization that we who come here cannot have the benefit, experience and work and contact with those city officials.

I think this is a very vital proposition, and that it would be a great mistake if we should not at this time take every step possible to make our organization really representative of the food and drug control world of America.

SECRETARY NEWMAN: I do not think anybody disagrees with Mr. Woodworth, but the proposition is, how would you have those city men vote? The only thought I have in this is not to slow down the meetings. The caucus proposition is a long, slow proposition. You cannot deny these city men their vote. You have got to wait for them to caucus—they may be all night. For instance, at this convention there would be a lot of Illinois cities represented. They might have had any number of views; they might caucus all night. You can't deprive them of their vote. You have got to wait till those men have finished and agreed or agreed to disagree. It is just the machinery I am interested in, as to how this thing should be handled.

MR. R. E. ROSE: That can all be regulated by by-laws. There can be a roll-call and those present can answer as their names are called. If they are not present they are absent. It will be necessary for them to get together and say whether they are going to vote aye or nay, and vote by ballot. Don't make a man state how he is going to vote, then make him cast a ballot as they did at Denver. I wasn't ashamed of my vote, but there were certain weak sisters who voted viva voce and who would have voted differently had they not been under that rule. I believe this covers the ground as thoroughly as we can get it at the present meeting; that every state will have three votes, that two of these votes will be cast by the state administrators and one vote by the various cities present, who have agreed among themselves what that one vote shall be, and delegate the man to cast it. I move the previous question.

MR. G. L. FLANDERS: Mr. Chairman, I was one of the members who suggested giving the vote to the city men at first. I believe then and do now, that giving them an associate membership makes them members just as much as the officers of the department of state, as the constitution now exists, but they do not have the right to vote. They can't take part excepting when they represent someone else. That is true stood that we were to report something, an amendment, giving the franchise in some form to the people we were asking to come in. We thought by this amendment we would reduce the difficulty, so that the city delegates would not flood the convention with a lot of city men and run the convention.

I wish to say just one more word. A gentleman came to me this morning and raised a question entirely new, which is this: That if a state, say like New York, has a number of cities coming here that cast one vote, the commissioner of New York or his representative, two votes, and if some state is represented that didn't have any cities that state would have three votes as against New York having two. I didn't raise this question. A man who hasn't been in the discussion raised it to me this morning. So you may con-

sider the matter before you for the final vote. I reserved on the committee this right: While the committee was instructed to report an enfranchising amendment we were in duty bound to do it, so we reported the one we thought had the least danger in it. I reserved the right to vote against the matter of amendment on the ground that I didn't think that they could be enfranchised at first. We could run it this way a year or two, without giving them the vote, and find out how it operates, and then it might be well to extend the vote if necessary. We do not want any over-lordism, but as a matter of fact the great Sanhedrin today of this country is the United States Government, and properly it should be, because we are trying to get uniformity and you have got to have some place to begin. Begin with the head and try to make it uniform and universal all through. Make it uniform with the state and work down to the municipalities. The municipality is a creation of the state and has no authority except what is given it within a limited area. After your children come in, give them a right to vote as against the head of the family if you want to do it. I myself feel as though it is possibly a mistake. I do not want to say that my judgment is to govern here, but it is rather leading me to think it is a mistake, without knowing whether they are coming or not, or if they do come in, what way they come. I remember Denver very distinctly, and I want to say to you that I think they did pull wires hard, but I do not think it was all one-sided, as some people think it was (laughter).

DR. E. L. BARNHOUSE: Mr. President, it seems that I had in mind the other day this same point that if a commissioner of the state was authorized to organize his city health departments into a subordinate organization, then the commissioner ought to be authorized to issue the credentials to the cities, because the commissioner still has charge of all the cities in every part of his state. No health department can go along without complying with the state law. No city can pass an ordinance in violation of the state law. The commissioner is supreme in the state, and it seems to me the easy way out of this is to require the city delegates to bear the credential of the state commissioner.

MR. FRED L. WOODWORTH: Mr. Chairman, it seems to me that this organization, as it is here, until we adopt a model election system, is going to be here even longer and in more trouble than Secretary Newman figures we will be in at the next session.

I would say in regard to the suggestion of Mr. Flanders, that we must stick very closely to our constitutional rights given to our officers, and fortify ourselves with all the power that gives us, and I will say my feeling in my state is that there is a certain amount of food control work being done by the city and by the state department, and that if my department isn't strong enough and capable enough and worthy of respect enough to lead the work in that state, I wouldn't want to lead it, and if my cities are stronger than we are, they deserve all the respect that strength will give them, and I am not going to take the position of hiding behind the strength of my office to get a standard that is not due me, and because of the quality of work we do.

MR. G. L. FLANDERS: May I add one word? I want to call your attention to the fact that Mr. Newman in his paper yesterday told of, I think, seven or eight different regulations made, different authorities, where six or seven of them were common in a number of places. For instance, one authority gives say 50,000 minimum bacteria, another one has thirty, another fifteen. The question arises whether it is good judgment to move forward slowly so as to make no mistakes, and so as not to take any backward steps.

MR. FRED L. WOODWORTH: Mr. Chairman, one of the points raised has been the question of the milk inspector. I will venture to say that milk inspection is one of the most vital food works that is done in this country, and I am going to venture to say that 60 per cent at least, and probably more, of the milk inspection work done in America is not represented here, and under our system will not be, because a great share of the milk inspection work is done by the municipality. Fur-

thermore, it is very desirable that there will be uniformity, as Mr. Newman said, and we will never get uniformity until we get the people back of that inspection in here and talk it over. That is the purpose of this meeting, getting us together here. I desire to secure greater uniformity.

PRESIDENT FOUST: It seems to me the one question here is that of voting: I am sure it will stand just as it is now, with my suggestion. Each state will have three votes, and if you are dissatisfied with this, and if a state has 25 cities represented, then the state will have 28 votes, a vote for each city that has a vote or representative. It leaves the voting situation exactly as it is here today, excepting as Mr. Newman, the secretary, said to me, then the state could gobble up the whole thing. That is not likely, but it seems to me that you could settle this whole thing by adopting something of that kind.

MR. R. E. ROSE: Mr. President, I didn't get your idea. As I understand it, each state is entitled to three votes, two of which would be cast by the commissioners or his representative, and one by the associate cities. You have got dozens of cities in this state that would be entitled to one vote as a whole. The municipalities would cast one vote under this, and the state commissioner would cast two votes. Am I right?

DR. CARL L. ALSBERG: That was the intent.

MR. R. E. ROSE: If an hour was fixed for calling the ballot and ample time given for calling the ballot, the vote should be recorded.

SECRETARY NEWMAN: Mr. President, I want to clearly be on record for enlarging the association to the greatest possible degree. To protect us next year, I will do as we did at Atlantic City, I will serve notice now of a desire to offer an amendment to Section 11.

DR. CARL L. ALSBERG: Mr. Secretary, I would suggest you give yourself more play by serving notice with reference to articles 10 and 11.

SECRETARY NEWMAN: With that suggestion I move that the report of the committee be adopted and we vote by ballot.

MR. B. L. PURCELL: Mr. Chairman, I want to withdraw my former objections and say that I am in earnest accord with the purpose to have affiliated with us the cities of the state, but I see no reason why the provision now existing for the vote from the dairy, drug and food commissioner, if there be one, should be cut down to two votes. I suggest as a substitute that the present voting strength of the states, three votes, be retained, and the associate vote of the cities of individual states be given one vote.

PRESIDENT FOUST: I think it would be a good idea to take a vote on this.

MR. GUY G. FRARY: Mr. Chairman, I think this idea of Mr. Purcell's is splendid. Then if Virginia is represented by the state department and the city of Richmond, the state department would still have as many votes as South Dakota.

DR. CARL L. ALSBERG: Mr. Chairman, it was the intention of the committee in drawing up this report to carry out what they believed to be the express wish of the association. The committee in making its report was foresighted enough to think there were really three distinct lines of work which might be separated and in charge of different individuals in the state, such as drugs, dairy and food, and that the amendment therefore as submitted might disenfranchise one or the other of those departments. It is Commissioner Purcell's intention to avoid that particular objection to the proposed plan. I have consulted with Commissioner Flanders and Commissioner Jackson, and we feel that we would be perfectly glad to accept the suggestion of Commissioner Purcell. I think it is a vast improvement on what has been suggested. I believe Mr. Jackson and Mr. Flanders agree with me on that.

MR. J. S. ABBOTT: Mr. Chairman, a point has been made here that the motion I made yesterday was not quite clear. I want to take this occasion to make it very plain. In making the motion yesterday I had no thought of attempting to outline a plan or to propose an equitable voting plan of membership. The thing I wanted to get before this convention

was whether or not we should consider this class of agencies, the food and drug control officials, as worthy of membership. I had no thought of even intimating that they ought to be on equal footing or any particular footing, or that they should have any particular relative power with respect to the matter of membership.

Personally I am in favor of Mr. Purcell's proposed amendment. I see no reason why the states should not retain their rights of voting, as they have, because in some states we have three organizations, and I have no objections to the method of giving to the cities the one vote. So far as the mechanism of this voting is concerned, I don't think there is any more trouble connected with the city organizations than there would be with three separate state organizations. They can handle that among themselves and it can be carried right along.

PRESIDENT FOUST: I am going to take a vote on this.

MR. GUY G. FRARY: There is no motion, Mr. Chairman, about this.

PRESIDENT FOUST: It is Mr. Purcell's recommendation that the states retain the three votes and the cities be given one. All in favor of this, stand up; those opposed, the same sign. It is unanimously carried.

Now, it is in order to vote on the adoption of these amendments, as suggested by Commissioner Purcell, by calling a roll of states, and I will ask Commissioner Jackson and Dr. Frear to act as tellers.

(While the ballots were prepared, the Secretary called the roll to see if any additional states had come in since the report of the credential committee had been received.)

PRESIDENT FOUST: I now declare the polls open, and as your name and the name of the state is called, kindly come up with the ballot, and it will be for the adoption of these amendments as a whole, with the suggestion as made by Commissioner Purcell of Virginia, on the last two, which forms really one amendment. I think everybody understands it now. You vote for the adoption of all the amendments, or you vote against it.

MR. GUY G. FRARY: To be edited as the committee sees fit, are they not?

MR. F. A. JACKSON: Yes.

PRESIDENT FOUST: That is going to be corrected. Vote yes or no; no is against the adoption, voting yes is for the adoption.

(Secretary Newman called the roll by states.)

PRESIDENT FOUST: The poll is declared closed; the tellers will count the ballots and the result will be announced. I will ask the committee to go in the other room so we can go ahead with our work.

The next paper will be "Co-ordination of State and Municipal Food Control, with Especial Reference to Meat, Milk, and Sanitation," by Dr. H. E. Barnard, Dairy and Food Commissioner, Indiana.

CO-ORDINATION OF STATE AND MUNICIPAL FOOD CONTROL, WITH ESPECIAL REFERENCE TO MILK AND SANITATION.

BY DR. H. E. BARNARD,
Dairy and Food Commissioner, Indiana.

DR. H. E. BARNARD: Mr. President, and gentlemen: I hate to break into this discussion about the constitution. I haven't seen much of constitutions lately. It has been mighty interesting yesterday and today, to know that there was such a food administration. We are not paying much attention to constitutions now, and my paper comes very properly, I think, at this stage of the proceedings. It is going to be very short and decidedly oral. I haven't had time to prepare any papers lately.

I am glad, however, that I had this opportunity to discuss the relationship between the work of the city and of the state administrator on the matter of food control. I have always felt that we in our state position were apt to get off the track and to forget that much of the best work of the country is now being done in city laboratories by city chemists, under administrations which are certainly no more political than those of the office we hold ourselves.

Certain features of food control work are essentially local in character. We still carry in the name of our Association the word "Dairy" and yet aside from the administrator the work of milk control must be done to a very large extent at least by the municipality. I have tried for more than fifteen years to evolve a plan of work sufficiently complete, so that I as a state administrator could secure for the people of the state an adequately safe milk supply, and I have concluded some time since that it could not be done that way. The inspector who handles milk work must be a man who works out from a laboratory operated in the city and not from a central office through which it is impossible to get samples for analysis sufficiently fresh to determine their character.

Much of the sanitary work is also a matter very largely of local interest, and as someone pointed out a few moments ago, no cities are allowed to pass ordinances which conflict in any way with state laws, therefore the state administrator is protected in his office, but in many cases city local ordinances become necessary, which very properly ought not to be made a part of the general statutes of the state. I have never felt that we needed very much special legislation in the states, but rather that we could do what we had to do and be less handicapped than if we operated under pretty general statutes, at least that has been my experience in Indiana. So I feel that the city health officer, who I trust in most cases is a well-enough trained man scientifically and a large enough man to realize that his work must be done by his inspectors and by his chemists and the administrator or commissioner for the state, to be able to work together to control the character of the food supply conditions better in the state than if the work was done almost entirely from the state-house.

I do not think I will pursue this matter any further. The vote you have just taken makes it unnecessary. I am glad that another year we shall have the pleasure of having with us men who are doing the work, right beside us, and who are doing it very well indeed. Thank you (applause).

PRESIDENT FOUST: Now for the discussion of this paper, we will hear from Commissioner Rose, of Florida.

DISCUSSION.

MR. R. E. ROSE: Mr. Chairman, I do not know that I can add anything at all to what Dr. Barnard has said. Our experience is right along the same line as his. We have several cities in our state, not very large ones, the largest one is about a hundred thousand, and we have a number of smaller ones and each one of them has a local milk supply, controlled by local health officers, who have their line of inspectors, and as Dr. Barnard says, it is necessary for them to have a laboratory convenient in order that they may get fresh supplies of milk. It would be utterly impossible for a state, particularly as long a distance as Florida, to examine the samples of milk while they were still in a fresh state, and that is why I want to see more co-ordination between the municipal officer and the administrative officer of the state.

PRESIDENT FOUST: We will now hear from Commissioner Sorenson. Mr. James Sorenson, Dairy and Food Commissioner, Minnesota.

MR. JAMES SORENSON: Mr. President and gentlemen of the convention: I had anticipated some time ago that we would be busy toward the last of these sessions, and for that reason I made my paper very, very short, that is at least one of the redeeming features of it.

DISCUSSION OF STATE AND MUNICIPAL FOOD CONTROL.

BY JAMES SORENSON,
Dairy and Food Commissioner, Minnesota.

MR. PRESIDENT AND GENTLEMEN:

I take it for granted that the word "co-ordination" conveys, to a certain degree, the same meaning as the word "co-operation," when used in discussing this important subject.

I am a firm believer in co-operation, and am heartily in favor of co-ordinating the work of officials of state and municipalities, as such co-operation cannot fail to produce

more efficient and harmonious results than can possibly be had with divided efforts.

State laws regulating and controlling the manufacture and sale of dairy and food products within the state must necessarily be enacted by the legislative bodies of the state, and it is reasonable to believe that laws so enacted will not always meet with the approval of all officials of municipalities within the state, and it is for this reason that we too often find the efforts of state and municipal officials are not co-ordinated for the best interests of law enforcement.

If state laws which have to do with food control carried with them sufficiently large appropriations to allow the employment of a force of inspectors, such as would be needed to efficiently look after the manufacture and sale of all kinds of food within the state, there would be little or no need of municipalities carrying on inspection work, as that would be merely a duplication of the work already done by the state.

But, unfortunately, it is not possible in any state to obtain appropriations of sufficient size to efficiently control the manufacture and sale of all goods, or to properly enforce the sanitary regulations, as applied to the handling of all food products, and it therefore becomes apparent that municipal control and inspection is a necessity, and that ordinances and regulations passed by municipal governing bodies should, as far as possible, be drafted to harmonize with existing state laws.

With co-ordinated state and municipal laws and ordinances, the main barrier between state and municipal officials has been removed; real co-ordinated effort can be accomplished only by eliminating politics in the appointment of inspectors, as efficiency is out of the question so long as a change of administration affects the positions of the workers. Civil service rules should be strictly enforced in selecting inspectors, and if any political pressure is brought to bear upon the appointment of a person to an official position in the inspection service, such a person should be barred from holding office, regardless of his qualifications. My idea is that a public official, such as a food or dairy inspector, should take his position without obligation to anyone.

In enforcing sanitary laws and supervising the sale of such products as meat and milk, it is especially important that real co-operation be practiced between state and municipal law enforcing bodies. The fact that the products named are highly perishable and liable to rapid decomposition makes frequent inspection very necessary and, as state and federal inspectors must cover large territories, they cannot visit the different communities often enough to efficiently supervise the handling of the various perishable products, and it is therefore necessary that the local inspector be on the job at all times. Where stubborn cases are encountered, it is often advisable for state and municipal forces to co-operate in bringing about improvement; hence these forces should keep in constant touch with each other, and each be informed of the efforts and work of the other, as only in that way is it possible to co-operate to the fullest extent. In other words, it is necessary that the forces engaged in inspection work use the same standard and be of one mind, so to speak. Selfishness and jealousy should be banished, and the protection of the consumer, as well as fair play to the producer, manufacturer, dealer and consumer should be uppermost in the minds of those who have to do with law enforcement.

Co-ordination of state and municipal forces, and true co-operation practiced by each individual worker, would insure more efficient inspection and better control over quality of all foods, and would finally result in giving the consumer the protection to which he is justly entitled.

REPORT OF TELLERS SHOWS AMENDMENTS TO
CONSTITUTION ARE UNANIMOUSLY
ADOPTED.

PRESIDENT FOUST: We will now hear the report of the tellers.

MR. F. A. JACKSON: Gentlemen, there were twenty-two states that voted, and the Department of Agriculture, making a

total of 23, or a total ballot of 69 votes, and the ballot was unanimously, "Yes." (Applause.)

PRESIDENT FOUST: I therefore declare all of the amendments read by Dr. Alsberg adopted, with the amendment suggested by Commissioner Purcell, and the changing of the phraseology as referred to during the debate or discussion. The amendments are therefore adopted as a whole (applause).

The next subject is "Factory Inspection," by Dr. J. R. Garner, of the Federal Bureau of Chemistry, Chicago.

FACTORY INSPECTION.

BY J. R. GARNER,
Federal Bureau of Chemistry, Chicago.

There are a number of kinds of factory inspections, but the kind which we will endeavor to keep in mind and follow is that sort of an inspection which has to do with information gathered in connection with the problems of food law enforcement. Many problems and questions arise by actual observance or in some cases by documentary information, in investigating the methods and practices used in the manufacturing and marketing of food and drug products. What then is a factory inspection as construed along these lines? Briefly we might say in a general way that it is a viewing closely and critically a factory or concern, in order especially to ascertain quality or condition, and to detect any misstatements with reference to practices in manufacturing and marketing food and drug products. It is more than a mere call or visit at the factory. It requires an actual bona fide investigation which will call into action close observation, keenness of perception, a good ear, amiability and tact. One must have a fixed purpose or goal in mind, and make his inquiries and observations along that line so that he can satisfy himself whether or not certain conditions exist. It is necessary to be able to discern between essentials and non-essentials, so that the facts reported may be clear and intelligible to the executive making recommendations. Memory is an important factor to be developed in this kind of work, because it will be greatly taxed after the inspection is completed and the facts are being assembled for the preparation of the report. It is then necessary to be able to outline in natural order the practices and processes briefly, concisely, and in such sequence that the reviewer will be able to follow the article and its manufacture from beginning to completion. In any factory inspection it is a good practice to begin with the operation and follow it step by step until finished.

It is hardly necessary to point out in detail the various needs of practical factory inspection, because to an experienced official, or one having had to do with the execution of the dairy and food laws of the various states, the value of such investigations are at once appreciated. I wonder how many times you have debated in your own mind whether this action should be taken or that procedure followed just because you did not have at your command a crisp, concise report of the methods and customs of the concern under consideration. How much more easily might it have been for you to reach your conclusions and recommendations had you but been supplied with first hand information about that special factory.

It is believed that before any investigation is undertaken a definite plan should be devised, and in forming this plan it is believed that the chemists and inspectors should discuss and prepare jointly the outline of the procedure. While no rules may be made as to the points to be discussed in a conference of this sort, among the important phases which should be considered are:

- The preliminary survey to be made.
- The kind of investigational samples to be obtained.
- Data concerning raw materials received, sanitary conditions, etc.
- Processes of manufacture, special equipment, etc.
- Manner of labeling and distribution.
- In making factory inspections ample time should be taken

to do the work in an efficient manner. It is better to spend an extra day or half day and do the work thoroughly than to rush through the plant and not secure all the data necessary. If the investigation is not worth doing well it is not worth making at all. In requesting a factory inspection to be made, it should be the duty of the individual making the request to see that the person making the investigation is supplied with all the information available on the subject. This will equip him with a fund of information which will be useful to him in making his inquiries. This is especially true with new employees or in case the industry is not a familiar one. In making a dairy inspection, for instance, would it not be a good plan to have an outline fashioned something like the following, so that important points to be considered would not escape attention:

1. Health and kind of cows.
2. Location and drainage of barn and yards.
3. Material and cleanliness of floors.
4. Surroundings with view to contamination.
5. Light and ventilation.
6. Separate rooms for handling milk and washing utensils.
7. Precautions taken to prevent dirt or filth from cow getting into milk.
8. Washing hands before milking.
9. Kind of pail used, whether small mouth or open, and cleanliness.
10. Strainers: wire mesh or cloth and how cleaned.
11. Care and cleanliness concerning all other utensils; sterilizing process.
12. Personal cleanliness of the employees.
13. Method and promptness of cooling milk.
14. Length of time milk is kept before delivery.

Many times the statement has been made that there are so many industries which are marketing products which are prepared in such a simple way that it is not believed that a factory inspection would show anything of great interest, and that very little information of a helpful nature in connection with the enforcement of the food laws would be gained. It is hardly believed that statements of this kind are justified, for after giving this matter careful study and consideration it is believed that there are a lot of valuable points to be learned in any factory. As an instance of this nature I will refer you to a cottonseed mill. Have you ever attached any great importance to an investigation of a mill of this kind? If not, it is thought that some consideration should be given, and it is believed that the following points will at once show that information gathered along these lines will prove very beneficial when giving consideration to a product of this nature:

1. Equipment installed and its particular function.
2. Raw materials used, character and quality.
3. Facilities for handling raw materials.
4. Manufacturing process and control maintained.
5. Manner in which mixtures are made and controlled.
6. Analyses of the products, both raw and finished, for their feeding value.
7. Weighing of product; uniform weights.
8. Tags supplied by mill or broker.
9. Description of tags and labels used on different products.

Suppose that you should ask one of your men to make an inspection of a tomato pulp canning factory, what information would you expect to receive? A number of points in connection with a factory of this sort are interesting, among which might be mentioned the following:

1. Kind and quality of tomatoes, whether green, ripe, over-ripe, or decayed.
2. Length of time they are held before using.
3. Method of sorting, the number of sorters employed and their efficiency.
4. Description of the machines used, how cleaned and how often.
5. Description of the washer and in detail if any particular or unusual kind is used.

6. Washing process; rate a given amount and wash, water pressure and cleanliness.

7. Cyclone, cleanliness both inside and outside.

8. Condition of the cans being used.

9. Number of packages of different size in which pulp is packed.

10. Weights of the finished product.

11. Specimen labels actually being used.

You will be especially interested in inspection reports which are made in connection with perishable products—those where pollution or contamination may occur in the process of manufacture. From the analysis it will be difficult to determine just the reason for adulteration, but by having an investigation made and investigational samples taken during the various steps of manufacture, the difficulty can be definitely located. It will then be possible to determine if the adulteration occurred in the manufacturing process or whether the raw materials used were unfit. Furthermore, in the examination of cider vinegar it will be of great value to you if the inspection report shows the raw materials on hand. For instance, has the manufacturer been purchasing coloring matter such as caramel coloring, phosphoric acid, boiled cider, potassium or sodium carbonate. Is waste vinegar or sugar vinegar manufactured in the same establishment, and is distilled vinegar or commercial acetic acid being purchased? Investigational samples taken of these and all other products in the tanks, vats or other receptacles, analyzed and tabulated, will show interesting results.

By having inspections made after some specific outline as heretofore presented, and by having the special points mentioned in connection with each particular industry enumerated, you will soon find that the men will develop a new interest in the work and at the same time there will be accumulating in the office information which will prove invaluable. One of the best ways to obtain results is to interest and help the men who are doing the work in their investigations, by furnishing them from time to time with the valuable hints on the various points which arise in the work. Take all the material gathered by the men and prepare it in the form of memorandum and distribute among them so that each will have the benefit of the other's ideas and experience. Being supplied in this way with the available information on the subject they will be in a better position to carry on the work and in carrying it on they will do more efficient work; being efficient in their work they will be able to do more work in less time and do it more satisfactorily. Efficiency in this kind of work is organized, planned action marked out in advance. No real good is accomplished through haphazard methods, but rather by having a fixed purpose and working to that end. Progress in the work will then surely follow.

PRESIDENT FOUST: Is W. G. Tice, Chief of Bureau of Food and Drugs, New Jersey, present? Not present. We will now go back to the committee on Definitions and Standards. Dr. E. F. Ladd, Chairman, told me yesterday that he had no report to present, and if any report was presented it would be by Mr. Abbott. Is Mr. Abbott present? (He was not.) If not, we will take for granted there will be no report at this session. At this time I will appoint Dr. William Frear to discuss the paper read by Attorney McKinley. If there is nothing further, we will adjourn till five o'clock this afternoon.

The meeting was adjourned till 5:00 o'clock P. M.

SIXTH SESSION.

Friday, August 30, 5:00 P. M.

PRESIDENT FOUST: The meeting will come to order. First we will have the report of the committee on resolutions. After Dr. Frear arrives we will go to the order of business on today's program—Round Table. Has anyone any questions he wants to ask under this head?

MR. F. L. WOODWORTH: Mr. Chairman, while I was coming in I was wondering if any of the few in here can offer any light on this problem: what would you do when Mr. Hoover puts out a rule advising a certain action in regard to food and drug control which is contrary to the state law?

PRESIDENT FOUST: I desire to answer that because I met

it. Two questions came up in Pennsylvania and I told the attorney for the Federal Food Administrator that if the attorney general would give me an opinion I would be very glad to follow out the ruling of the federal food administrator. One question was to extend the time limit for cold storage from the time limit in the Pennsylvania law to the time limit fixed in the regulations of the federal government on cold storage, which was from season to season on certain products which are seasonable products, such as butter, eggs, and poultry, which would increase it to twelve months. Eggs are eight months in Pennsylvania, butter nine, fish nine, so that on those products it will put it up to twelve months. The attorney for the Federal Department, Food Administration, made a rough draft of a request that I made, to the attorney general, and embodying his opinion, and I got an opinion from the attorney general that we couldn't set aside our law, he couldn't, and the food commissioner couldn't; no one but the legislature that created it could, but in time of war the President of the United States under an Act of Congress could make a regulation that would supercede our law, and that he would not issue any general ruling on the subject but meet each condition as it would arise. There were two conditions mentioned in this request that I made to the attorney general for an opinion; one was extending the time limit on storing products in cold storage, the other was affecting dried cod and other dried fish treated externally with boric acid. On the storage the time limit was extended to 12 months as a war measure during the period of the war only, and the second ruling allowed dried codfish and other dried fish to be treated externally with boric acid, if instructions are given how to eliminate it by soaking, maceration, water and so on, so that on those two points our Pennsylvania laws are temporarily set aside, but he was very careful in giving me the opinion to state that each condition would be taken up when it would arise, and be dealt with in that way. So that we have not had much trouble in Pennsylvania on that point, except, as I said before, the time limit on the cold storage law has been increased. Has anyone else any questions to ask under this Round Table Topic on today's program?

DISCUSSION OF MEANS OF ENFORCING EGG LAWS AND REGULATIONS WITH SPECIAL REFERENCE TO EGG CANDLING.

SECRETARY NEWMAN: Mr. President, if there is nothing more important I want to say a word about this work which the Food Administration, the Bureau of Chemistry and the Food Departments have taken up on eggs. The department at Washington and the food administration in Washington asked everybody down there at a conference on this matter, and we went into it, and you all had a report from Mr. Abbott's office about it. We are trying vigorously to enforce that law in this state.

If we are to go on with this egg candling proposition you will see, I think, that we have all got to work together. It is unfair to have one district enforce this law and another not. There is an awful waste. I can't see how any state food administrator can consistently consider that he is a good food administrator and not enforce that law. We are enforcing it to the letter here in this state, and from the results that we have had I recommend it most earnestly to you. If the Illinois man is going to candle eggs coming in on this market we are going to require it from other states or we are going to ask the food administrator to reject the material. We have been obliged to take our men and go down here to the cars and see that eggs were candled, because somebody at the other end of the line refused to act. In the meantime a large number of worthless eggs have been using up transportation facilities and everything else, and causing trouble. Mr. Priebe gave me a whole bunch of letters about it, and particularly one referring to this other thing, that hucksters will ask for the right to candle after they get the eggs to town, and make settlement next time. That is not the way to do it. The huckster must candle at the farm. He told me to tell you gentlemen or write, if you like, to the food administrators in both Tennessee and Kentucky, that he hap-

pened to be there right after those regulations were issued, and in Kentucky particularly, they said, the man going out in those hills said there would be no business if they stopped to candle at the farm. Priebe told him to try it. He went back, and in six weeks he said there was a great change, that it was a great success. It was the hardest battle we had here. We are sitting tight on it.

MR. B. L. PURCELL: Mr. Newman, what control are you attempting to take over the farmer that ships direct to the commission man?

SECRETARY NEWMAN: We candle to see that they are within the law and regulations. We find some farmers who will not deliver eggs to be candled. In that case we then prosecute the farmer for having in his possession, with intent to sell, a filthy, putrid or decomposed product.

MR. F. L. WOODWORTH: That is in Illinois.

SECRETARY NEWMAN: All the food administrators have asked that they have that same law. They have extended the license feature to everybody dealing in eggs. They can revoke his license, and in Illinois we can prosecute him.

MR. F. E. ROWLAND: Mr. Chairman, I would like to ask Mr. Newman how would that apply, that is, to the farmer shipping eggs if he is not a licensed shipper. He doesn't have to have a license under the food administration regulation. I don't see how that would apply.

SECRETARY NEWMAN: I don't see why you can't prosecute the farmer for offering a filthy, putrid or decomposed food product for sale.

DR. WILLIAM FREAR: You can't compel him to put in a certificate.

SECRETARY NEWMAN: Not the producer, unless he is a dealer, also. The first man who handles those eggs must be responsible for them, he must candle them.

MR. F. E. ROWLAND: The food administrator wouldn't have any jurisdiction because he has not a license.

SECRETARY NEWMAN: The food administrator begins with the first concern; but the food law covers everybody offering for sale a filthy, putrid or decomposed product.

MR. F. E. ROWLAND: I don't see how you can differentiate between the common carrier and the huckster. If you allow the farmer to ship his eggs to the market, why can't the huckster just as well do the same thing? You say he doesn't pay till he candles the eggs at the centralizing station.

SECRETARY NEWMAN: I say we make the huckster candle at the farm.

MR. F. E. ROWLAND: I don't see how you can make him candle them and not allow the farmer to ship.

SECRETARY NEWMAN: The huckster is on the basis of the first concern and not on the basis of the farmer.

A MEMBER: You say if he buys subject to the candling law when it arrives and doesn't pay till his next trip he is not paying these people for equitable eggs because he candles them as soon as they arrive at destination.

SECRETARY NEWMAN: The farmer is the producer, the huckster is not a producer.

DR. WILLIAM FREAR: The huckster is a buyer, the railroad company is not a buyer.

SECRETARY NEWMAN: A huckster takes the eggs into town. He tells you he will write the farmer about the bad eggs, but he doesn't know who had the three dozen that were bad, he will have the eggs mixed up, and when he goes to settle with the farmer, he is guessing.

MR. F. E. ROWLAND: He is also guessing when he is candling on the farm.

SECRETARY NEWMAN: I don't agree with you. The huckster can candle on the farm.

MR. F. E. ROWLAND: We have done two months, this year, of solid egg work. Our inspectors have done nothing else, and could not, at the receiving stations. It seems to me it would be a waste of energy for us to attempt to make the huckster candle on the farm.

SECRETARY NEWMAN: Don't you think if you did, those hucksters would practically be inspectors for you, they would candle right in front of the farmer?

MR. F. E. ROWLAND: You get a farmer who had a pretty fair stock and he wouldn't candle it.

SECRETARY NEWMAN: The farmer's stock might be good today and not tomorrow. I will be glad to show the letters Mr. Priebe gave me, on the very point that hucksters should candle at the farm.

MR. F. E. ROWLAND: I don't think there is any advantage for the huckster candling on the farm. So far as he is concerned, he can candle his eggs as soon as they get into a centralizing point anyway. They are candled there and the bad eggs are charged back, so there would be no object in the farmer selling to the huckster.

SECRETARY NEWMAN: I don't see any difference between that and letting the receiver buy them and ship them to the central station.

MR. F. E. ROWLAND: Because he has got to pay the farmer as he brings them in. He has got to pay the farmer, and he couldn't possibly send those eggs in marked, but the farmer could do that.

DR. WILLIAM FREAR: They do that in some cases, mark the farmer's case, the commission merchant reports on each individual case, but I think it is a very bad policy.

MR. F. E. ROWLAND: As far as the huckster is concerned, they would have poor facilities. We have very few hucksters in our locality, probably not a half dozen in the state. I would like to ask another question, Mr. Newman. How are you going to require the second man to candle under the food administration regulation? I mean the second after they have bought at a local store and shipped, say, to Swift & Company. How are we going to require them to buy loss off?

SECRETARY NEWMAN: Under the food administration regulation there is no such thing as buying loss off. They sign their names to this card and Swift & Company receives them and takes them out. They are transferred, they have got to take that egg candling certificate out and substitute Swift & Company's.

A MEMBER: The food administration says the first buyer.

MR. F. E. ROWLAND: We require that by state regulation, but to get the food administration to co-operate with us it will do anything, but if it came right down to the point of testing it out, whether they would really back it up I don't know.

SECRETARY NEWMAN: From experience I have had and from what Mr. Priebe says, they will give you the utmost backing up. Anybody that attempts to fight against a food administration regulation has got a mighty poor chance.

MR. F. E. ROWLAND: We would like to have the food administration regulation rather than our own food regulation.

SECRETARY NEWMAN: I will try and get you one that was sent out here.

INVITATIONS FOR HOLDING NEXT YEAR'S MEETING.

PRESIDENT FOUST: Dr. Frear will be here in a few minutes. If there are any reports to be acted on, we will hear them now.

A MEMBER: I would like to suggest that the secretary read a list of the cities that have invited the convention next year.

SECRETARY NEWMAN: The cities that have invited us are Des Moines, Iowa; Tallahassee, Florida—I believe in that case the governor himself supplemented it by a personal invitation—Cleveland, Ohio; Cincinnati, Ohio; Asheville, N. C.; St. Louis, Mo., and New York City. We had three different sets of invitations from New York City, and this morning the president got four telegrams from there.

MR. F. A. JACKSON: Mr. Newman, you had an invitation from Providence, Rhode Island.

SECRETARY NEWMAN: I will take your word on that, Mr. Jackson. I have had a file on the next convention, and I thought I had them all together, but I will take your word on that.

MR. F. A. JACKSON: I have a telegram that has been sent here from the Chamber of Commerce, signed by the president of the Chamber of Commerce, inviting us to meet there next year.

ST. LOUIS DELEGATE: In the absence of Dr. Barnhouse and at the request of the mayor and the Chamber of Commerce of St. Louis, I desire to extend to this organization an invitation to come to St. Louis for your next convention. They appreciate the importance of the work that is being done by this organization and by each and every one of its members. We have something in the way of scenery that will interest you, many things in the way of manufacture that will interest you, and I am in a position to say that we will accord a very hearty welcome to the convention. We will take care of them in every way, have a hall for their accommodation and see that they receive the best possible treatment.

DR. WILLIAM FREAR: Mr. Chairman, if in order, I would like to make a motion that this matter be referred to the executive committee for consideration.

PRESIDENT FOUST: We will now hear the report of the committee on resolutions.

DR. WILLIAM FREAR: Mr. President, as chairman of the committee I respectfully report that the resolution introduced respecting the formation of organizations of food manufacturers has been slightly rephrased and submitted with a recommendation of approval by the committee on the following terms (read).

I will also state that a resolution was introduced this morning by Dr. Blanck, by a committee appointed by the President, in view of suggestions made by Dr. Kremers, which was to the effect of expressing the judgment of the Association that in the formulation of the standards of the United States pharmacopoeia the drug control officials, federal and state, concerning the enforcement of the standards, should have more reports on the committee. I do not seem to have that in my pockets, I don't know just the exact phrasing, but that is the sense, and your committee on resolutions recommends affirmative action also on that resolution.

RESOLUTIONS REPORTED AND ADOPTED.

WHEREAS, The war has largely affected the production of food and drug commodities and increased the use of substitute foods, and has in consequence required greater vigilance from those who administer food and drug laws and enforce regulations thereunder; and

WHEREAS, It will conduce to greater efficiency in the administration of food laws, and in the marketing of manufactured food products, if food officials can deal with organizations representing the respective lines of food production, rather than solely with individual manufacturers in these lines,

Therefore, Be It Resolved: That we heartily commend all movements looking to the further formation of organizations of the individual food manufacturers engaged in the several lines of food production in order that opinions, desires and suggestions regarding any proposed regulation may be submitted to us in concrete form expressing the united judgment of the industry as a whole, to the end that regulations, when formulated, may be enforced with the greatest good to the public and with the least disturbance of the business itself.

Resolved: That it is the sense of the Association of American Dairy, Food and Drug Officials that membership in the joint committee on food definitions and standards should be restricted to those who have no financial interest, direct or indirect, in the manufacture of food or drug products.

WHEREAS, There exists throughout a large section of the United States an avoidable loss of valuable food material in the course of the collection and shipment of cream to be used for food manufacturing purposes; and

WHEREAS, This loss is detrimental, especially at this time, to the interests of our nation and our allies,

Therefore, Be It Resolved: That the Association of American Dairy, Food and Drug Officials, assembled in convention at Chicago, August 27th to 30th, 1918, recommends that the Federal Food Administrator and the Director of Railroads investigate existing conditions and take such action as the economic conditions may permit to eliminate the above named loss, and

Be It Further Resolved: That copies of these resolutions be forwarded by the Secretary to Honorable Herbert C. Hoover, United States Food Administrator, and to the Honorable William G. McAdoo, Director of Railroads, for their consideration.

In view of the facts set forth in the report of the Association's committee, appointed to confer with the Honorable Herbert C. Hoover, United States Food Administrator, be it

Resolved: That the members of the Association of American Dairy, Food and Drug Officials hereby renew their pledge to assist the Federal Food Administration by all the means within their power.

Resolved: That this Association hereby expresses its thanks to the President and other officers of the Association for their efficient service in arranging and conducting the program of this convention; to Messrs. W. A. Bode, Charles Healy and other members of the Chicago Committee of Arrangements and to other associated citizens for the splendid entertainment they have provided and for the many courtesies they have extended to the individual members and their ladies; to Mr. Frank A. Smith of Pennsylvania for his untiring care of the comfort of members; and further

Be it Resolved: That the thanks and cordial appreciation of the Association are due to our esteemed Secretary, Mr. John B. Newman, to whose constant and indefatigable efforts so much of the success of the present convention is due.

Resolved: That the thanks of the Association are tendered to the management of the Congress Hotel for the thoughtful care given to the comfort of the members of the Association and its visitors.

MR. JAMES SORENSON: Mr. President, I move the resolutions be adopted as read.

MR. GUY G. FRARY: I second the motion.

(Motion put by Chair, voted on and carried.)

DR. WILLIAM FREAR: Mr. Chairman, I believe since the last session the Association has lost one of its members, Mr. Stockman, of Kentucky. Our committee has overlooked that and failed to draft an appropriate resolution of appreciation of his services, and if the association would consent the chairman will draft such a resolution so that it may appear as a part of the proceedings of this convention. I do not wish to attempt it offhand.

PRESIDENT FOUST: If there are no objections Dr. Frear, as chairman of the committee on resolutions, will embody a resolution on the death of the late Commissioner Stockman, of Kentucky. There seems to be no objection, and the resolution will be composed and handed to the stenographer, so as to appear in the records.

NOMINATION AND ELECTION OF OFFICERS.

We are now ready, under the head of business, to take up the election of officers for the ensuing year. Nominations are now open for the office of president, Mr. Flanders.

MR. G. L. FLANDERS: Mr. President, I have worked in this association a good many years, and I know a man here that has been tried and true at all times, always at his post. Others have done the same, but we know this man has occupied no office, and he is a man who has shown by his actions that he is faithful at all times, ready to change his position the moment he finds it is wrong. I therefore present his name as a candidate for president. I nominate Mr. Benjamin L. Purcell, of Virginia.

PRESIDENT FOUST: Commissioner Purcell has been nominated.

MR. JAMES SORENSON: Mr. Chairman, I second that.

MR. G. L. FLANDERS: Mr. Chairman, I move the nominations be closed and the secretary be instructed to cast a ballot for this nominee of the convention.

MR. F. A. JACKSON: I second that.

(Motion put by Chair, carried.)

PRESIDENT FOUST: The secretary has cast the ballot for Benjamin L. Purcell, one vote, being the unanimous vote of

the convention. I declare Benjamin L. Purcell duly elected president of this Association for the ensuing year. (Applause.)

Nominations are now open for first vice president:

MR. WAGNER: Mr. Chairman, I wish to nominate Mr. Frary, of South Dakota as the first vice-president.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: Mr. Guy G. Frary, of South Dakota, has been nominated for first vice-president. Are there any other nominations? If not—

MR. WAGNER: Mr. Chairman, I move the nominations be closed and the secretary cast the ballot for vice-president for Mr. Frary.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: The secretary has cast the ballot of the convention for Mr. Guy G. Frary, of South Dakota, for first vice-president for the ensuing year, Mr. Frary receiving the unanimous vote of the convention, is elected vice-president for the ensuing year. (Applause.)

PRESIDENT FOUST: The next nomination in order is second vice-president.

MR. G. L. FLANDERS: Mr. Chairman, I would like to nominate Dr. E. L. Barnhouse, of Missouri, for second vice-president.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: Are there any other nominations?

MR. G. L. FLANDERS: Mr. President, I move the nominations be closed and the secretary be instructed to cast the unanimous ballot of the convention for the nominee.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: The secretary has cast the ballot of the convention for Dr. E. L. Barnhouse, of Missouri, for second vice-president. Dr. Barnhouse receiving the unanimous vote of the convention, is declared to be elected second vice-president for the ensuing year.

The next is the third vice-president.

MR. WAGNER: I nominate Mr. Jackson third vice-president.

MR. F. A. JACKSON: Mr. President, I have filled several offices and think that some other man who hasn't had an office should be recognized. I would like to nominate Mr. Thomas Holt, of Connecticut.

PRESIDENT FOUST: If there are no objections we will permit Commissioner Jackson to decline; Mr. Thomas Holt has been nominated.

MR. JAMES SORENSON: I second the nomination of Mr. Holt.

(Ballot of the convention was cast by the secretary and Mr. Holt declared elected.)

PRESIDENT FOUST: The next in order is the treasurer.

MR. F. A. JACKSON: Mr. President, I would nominate the present incumbent, Mr. George J. Weigle.

(Seconded by Mr. Flanders.)

PRESIDENT FOUST: If there are no other nominations, a motion to close the nominations is in order.

MR. G. L. FLANDERS: Mr. President, I move the nominations be closed and the secretary be instructed to cast the ballot for Mr. Weigle as treasurer.

(Seconded by Dr. Frear.)

(Ballot of the convention was cast by the secretary, and Mr. Weigle was declared by the president to be duly elected as treasurer for the ensuing year.)

PRESIDENT FOUST: Next is the secretary.

A. D. Sibbald: Mr. President, I think, we would have considerable hardihood if we attempted at this time to nominate a secretary. I believe the secretary has already been nominated in the minds and hearts of the people of this Association, therefore I move that Mr. Newman be elected to succeed himself.

PRESIDENT FOUST: Mr. Newman has been nominated.

SECRETARY NEWMAN: Mr. President, this is a very enjoyable office. You fellows come here and you work hard and you give earnestly of your time, and I would like to see somebody else enjoy this. I recommend it to you.

PRESIDENT FOUST: Are there any other nominations?

MR. G. L. FLANDERS: Mr. President, I move the nominations be closed and that the president be authorized to cast a vote for Mr. Newman as secretary to succeed himself.

MR. F. A. JACKSON: I second that motion, Mr. President.

PRESIDENT FOUST: Commissioner John B. Newman, having received the unanimous vote of the convention, is declared elected secretary for the ensuing year. (Great applause.)

MR. F. A. JACKSON: We will do all we can to lighten your burdens.

SECRETARY NEWMAN: I thank you very much, gentlemen.

PRESIDENT FOUST: The next in order is the executive committee. The present committee is Dr. E. F. Ladd, North Dakota; Guy G. Frary, South Dakota; George L. Flanders, New York. Nominations are now open for executive committee.

MR. G. L. FLANDERS: I would like to inquire, are we electing all the executive committee this time, or just part of it?

SECRETARY NEWMAN: I think it was at Detroit we overlooked the proposition of one, two and three years and we elected a full board, either there or at Atlantic City, but we should elect one for each year. Now, as printed on this program, Dr. Ladd would be the retiring member. The man at the top of the list was the man retiring, the recently elected member being printed at the bottom of the list.

MR. B. L. PURCELL: Mr. Secretary, Mr. Frary was elected at Detroit and Mr. Flanders took Mr. Farrell's place. Mr. Farrell was elected at Atlantic City.

SECRETARY NEWMAN: Then Dr. Ladd is the retiring member.

MR. GUY G. FRARY: I thought of that when somebody nominated me for vice-president. Are we still on the one, two and three-year basis?

SECRETARY NEWMAN: My understanding was that we broke in on that at Detroit.

MR. B. L. PURCELL: Mr. Chairman, if there is any question about it I move that the present executive committee be re-elected as a whole.

(Seconded by Mr. Jackson.)

SECRETARY NEWMAN: I think Mr. Frary is right there. We have elected him to a vice-presidency.

PRESIDENT FOUST: It has been moved and seconded that the present executive committee be re-elected. If there are no other nominations the motion is in order.

MR. G. L. FLANDERS: Mr. President, the mover withdraws it on the theory that he is re-electing Mr. Frary, and Mr. Frary has been elected vice-president.

MR. GUY G. FRARY: Mr. President, suppose we agree I was elected for two years at Detroit and let my term expire, and let us elect someone in my place.

PRESIDENT FOUST: Mr. Newman is coming and we will find out about it.

SECRETARY NEWMAN: Here is the report of Detroit. You will recall that at Atlantic City we still had a nominating committee and somebody said it was illegal. Here is the executive committee matter brought up at Detroit. (Secretary Newman read from the report of the Detroit meeting.)

MR. GUY G. FRARY: Mr. Chairman, that seems to cover that. In view of the fact that I have been on this committee for two years, I will ask you to accept my resignation at this time, and suggest that we elect a successor and leave Dr. Ladd on the committee.

(Mr. Flanders was nominated.)

PRESIDENT FOUST: Has anybody else been nominated? Dr. Ladd and George L. Flanders have been nominated. Are there any others?

SECRETARY NEWMAN: I will read what the constitution says about election of the members of the executive committee. "The Executive Committee shall annually elect one of its members chairman, and the Secretary of the Association shall be the Secretary of the Executive Committee."

"Section 2. The Executive Committee shall arrange the program for the general meetings, and shall fix the time and place of holding meetings of the Association, unless otherwise directed by the Association. When the time and place

is fixed, the Secretary shall at once notify the secretaries of the sections, and shall also state the portions of the time to be occupied by the general meetings of the Association. When the Association is not in session, the Executive Committee shall act for the Association in such matters of business as may arise, or concerning which they may be instructed by the Association."

And in Article V, Section 3: "The Executive Committee shall consist of the President and Secretary of the Association, together with three additional members, who shall be elected by the voting members of the Association; provided, that at the first election, the first of the Executive Committee elected shall be elected for three years; the second member shall be elected for two years, and the third for one year, after which one member shall be elected each year to serve a period of three years."

MR. B. L. PURCELL: I very distinctly recall when Mr. Farrell was elected last year, that he was to succeed Dr. Crumbine, whose term of office had expired.

MR. G. L. FLANDERS: Mr. President, if that is correct, and it is correct, Mr. Farrell was elected last year for three years, then he went out of office and the president appointed me in his place. That raises a complicated question, whether I was appointed simply to hold office till the next meeting or for the remainder of the term.

PRESIDENT FOUST: I would suggest that you elect Dr. Ladd for one year and Commissioner Frary for two years and Commissioner Flanders for three years, and get that motion on the record.

SECRETARY NEWMAN: I don't want to monopolize the floor, but Mr. Frary remembers that he was elected two years back and Dr. Ladd was the top man, which would indicate he is the retiring man on the executive committee. So you have elected somebody in Dr. Ladd's place or returned him, then if you wish to put one in the place of Mr. Frary we will have two to handle. I am satisfied that the retiring member on the executive committee is Dr. Ladd.

MR. F. A. JACKSON: Mr. President, under those circumstances it gives me pleasure to nominate Dr. Ladd for a third term.

(The motion was seconded.)

MR. G. L. FLANDERS: Mr. President, I move that the nominations be closed and that the secretary be instructed to cast the ballot of the convention for Dr. Ladd, as a member of the executive committee for the three-year term.

(The secretary so cast the ballot, and the president declared Dr. Ladd duly elected to the office.)

SECRETARY NEWMAN: Mr. President, I would like to move that the convention approve the action of the present president in appointing Mr. Flanders on the executive committee for three years.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: It has been moved and seconded that the action of the president be approved in appointing Mr. Flanders on the executive committee for three years. You have heard the motion.

MR. B. L. PURCELL: Mr. President, I move the secretary be instructed to cast the unanimous vote.

PRESIDENT FOUST: All in favor of this motion to approve the appointing of Mr. Flanders for three years by the president will signify it by saying Aye, those opposed, No; so ordered. That leaves Mr. Flanders on now and he has two years yet to serve, and Dr. Ladd was elected for three years. That leaves Mr. Frary still on, for one year.

MR. GUY G. FRARY: Mr. President, I resign from the vice-presidency and I nominate Mr. James Sorenson for that office.

(Seconded.)

MR. GUY L. FRARY: I move that the secretary cast the ballot of the Association.

(The secretary cast the unanimous ballot of the convention, and the president declared Mr. James Sorenson duly elected vice-president to take the place of Mr. Frary, for the ensuing year.)

PRESIDENT FOUST: You have one year to go yet.

SECRETARY NEWMAN: He is the retiring member next year.

PRESIDENT FOUST: The next order of business is the committee on co-operation, Mr. Purcell.

MR. B. L. PURCELL: Mr. Chairman, it gives me great pleasure to nominate Mr. J. S. Abbott, of the Bureau of Chemistry, for the position of chairman of the committee on co-operation, and in making this nomination I desire to say to the convention that Mr. Abbott has been working hard on the committee ever since its formation, and he is not only entitled by virtue of the work he has done, but by his own special fitness and ability for that position.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: Are there any other nominations?

MR. B. L. PURCELL: I move the nominations be closed and that the secretary be instructed to cast the ballot of the convention for Mr. Abbott as chairman of the committee on co-operation.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: The secretary has cast the vote of the convention for Mr. Abbott as chairman of the committee on co-operation.

(Motion voted on, and carried.)

Mr. Abbott receiving the unanimous vote of the convention is declared elected chairman of the committee on co-operation for the ensuing year.

SECRETARY NEWMAN: Mr. President, Mr. Abbott having been a member of the committee on co-operation and succeeding Mr. Purcell, there is a vacancy in the place held by Mr. Abbott.

MR. GUY G. FRARY: Isn't all the committee vacant now?

SECRETARY NEWMAN: I will read what the constitution says about that. (Reads.)

MR. F. L. WOODWORTH: Mr. President, last year at Atlantic City Mr. Abbott explained that all members on the committee had left the association except himself. He was the only one, and the other two members were appointed to fill the vacancies.

SECRETARY NEWMAN: The constitution calls for three and we have five on this program.

PRESIDENT FOUST: I would suggest that you make a motion as to who shall constitute the committee of three. Mr. Abbott, of course, is chairman.

MR. GUY G. FRARY: Mr. Chairman, I move that the committee on co-operation consist of Mr. Abbott, chairman, Mr. Woodworth and Mr. R. E. Rose.

(Seconded by Mr. Jackson.)

PRESIDENT FOUST: It is moved and seconded that the committee on co-operation consist of Mr. J. S. Abbott, chairman, and Commissioner Woodworth, of Michigan, and Commissioner Rose, of Florida.

(Motion put by Chair, and carried.)

MR. G. L. FLANDERS: Mr. President, I move the nominations be closed and the secretary be instructed to cast the ballot of the convention for the commissioners named.

(Seconded by Mr. Purcell.)

PRESIDENT FOUST: It has been moved and seconded that the nominations be closed and the secretary cast the ballot for the commissioners named.

(Motion put and carried.)

Mr. J. S. Abbott receiving the unanimous vote is declared elected for three years; Fred L. Woodworth receiving the unanimous vote is declared elected for two years, and R. E. Rose receiving the unanimous vote is declared elected for one year. Now, I want to ask that there be a motion made to discharge the committee to revise the constitution.

MR. G. L. FLANDERS: Mr. President, I move that the committee, having performed its duties, be discharged.

MR. GUY G. FRARY: I would like to inquire if the chairman will be expected to act on the editing.

PRESIDENT FOUST: After the editing is done and the report is revised and filed, then the committee may be discharged.

MR. G. L. FLANDERS: I will withdraw my motion and offer the following: that the committee having performed partially its duties, the only duty remaining being to revise the amendments to the extent of editing them, be discharged after the completion of said editing.

(Motion seconded and carried.)

PRESIDENT FOUST: Dr. Frear has a report referring to the subject on the program on Thursday, "Unfinished Report of Canned Goods Committee." He is going to read the report and file it.

REPORT OF COMMITTEE ON SWELLED CANNED GOODS.

BY DR. WILLIAM FREAR,
Collaborating Chemist, Pennsylvania.

MR. PRESIDENT AND MEMBERS OF THE ASSOCIATION:

We, your Committee on Swelled Canned Goods of the Association, beg leave to submit the following report:

Your Committee has not undertaken to solve this problem. It seems that the food and drug control officials of the country have a choice one of three different ways of undertaking to control traffic in swelled canned goods. These three ways are presented to you for your consideration with the hope that an agreement may be reached today for the sake of uniformity of action. These three ways are as follows:

PLAN NO. 1.

"Swells" and "springers" may be handled just as other decomposed articles of food according to the specific provisions of the law or laws to which they are subject, the action taken to be determined by all the modifying circumstances in each particular case, according to the administrative discretion of the officials concerned, leaving it to manufacturers, jobbers and dealers to work out their own problems with respect to claims due to spoilage.

PLAN NO. 2.

This plan, designated No. 2, is the one presented to you by your Committee on Swelled Canned Goods last year at Atlantic City and is as follows:

"The Committee's idea is that when a claim is presented to any distributor or manufacturer and he should determine that he desired to have the goods represented by the claim returned to him, that he should notify the holder of the goods to the effect that these goods can be returned only after he has received a permit, this permit to be issued in the case of goods shipped in interstate commerce by representatives of the Department of Agriculture, or in the case of goods which are shipped only in intrastate commerce, to be issued by the proper state food officials."

PLAN NO. 3.

Food and drug control officials will not consider "swells" and "springers" as food as defined by the food and drug laws of the country while they are in transit to a jobber or manufacturer for his examination, provided such goods are plainly and conspicuously labeled

UNFIT FOR FOOD SHIPPED TO JOHN DOE & CO. FOR EXAMINATION AND DESTRUCTION

and provided that all food officials concerned in such shipments be furnished with copies of such labels identifying such shipments, and provided further that such officials be promptly informed of shipment and of receipt of consignments and also of their disposal.

Respectfully,

WILLIAM FREAR,
CARL L. ALSBERG.

PRESIDENT FOUST: I think the report of the committee ought to be accepted and the committee discharged. A motion to that effect is in order.

MR. B. L. PURCELL: Mr. President, I make a motion that the report of the committee be accepted, and that the committee be discharged.

(Seconded by Mr. Jackson.)

(Motion carried.)

SECRETARY NEWMAN: Just before we close I want to read to the members the set of officers for the ensuing year:

President, Benjamin L. Purcell.

First vice president, James Sorenson.

Second vice president, E. L. Barnhouse.

Third vice-president, Thomas Holt.

The same treasurer and the same secretary.

Executive Committee: Dr. E. F. Ladd, three years; Mr. G. L. Flanders, two years; Mr. Guy G. Frary, one year.

Committee on Co-operation: Mr. J. S. Abbott, chairman, three years; Mr. F. L. Woodworth, two years; Mr. R. E. Rose, one year.

There is another matter. The other day the paper that I read was a report of the committee on milk regulations with some remarks with the report. I am not sure whether the paper was simply read and understood as a paper, or did you take action?

MR. GUY G. FRARY: That was the report with the recommendation.

SECRETARY NEWMAN: The thing I had in mind is, several associations have gone into this with a great desire for uniformity, and there will be no skeleton to be set up as a model for uniformity till somebody starts in. I don't want you to adopt this rule until you have analyzed it and thought about it, but let the record show that the report was received and placed on file, if nothing more.

PRESIDENT FOUST: And the committee continued.

SECRETARY NEWMAN: I embody in there the same recommendations that the committee of the National Milk Inspectors' Association had recommended back to their committee. I am not desirous to have you indorse them unless you like, but by a committee's report what can I tell the committees of these other associations happened here?

PRESIDENT FOUST: A motion is in order. Shall we accept this report and not act on the recommendations, and continue the committee?

MR. F. A. JACKSON: Mr. President, I move the report be accepted and placed on file.

PRESIDENT FOUST: How about the committee?

MR. F. A. JACKSON: And the committee continued.

(Motion seconded and carried.)

SECRETARY NEWMAN: Mr. President, I was out of the room when the resolutions were read, and I want to thank the resolution committee and the Association for the section regarding the secretary.

MR. JAMES SORENSON: Mr. President, I want to offer a suggestion. A motion was made and carried here, that a state organization should be formed, and the commissioners of the various states, members of this organization, be requested—I will put it in another way: that a state organization be established in each state to act with this organization which would comprise all the city officials as well as the food and drug commissioners of the state, or the state officials, and the motion was to the effect that the commissioner should be requested to form such an organization. My suggestion is to make that official; that the secretary should be instructed to send communications to every commissioner requesting him to form such an organization.

MR. G. L. FLANDERS: Mr. President, I would suggest that in view of the fact that that question was up a day or two since, that the information sent by the secretary be the information that the stenographer has, of what transpired at that time. I am not quite clear whether he was instructed to form such an organization, but whatever the stenographer has.

PRESIDENT FOUST: That he proceed to carry it out. Is that the idea?

MR. G. L. FLANDERS: Yes.

PRESIDENT FOUST: All in favor of this motion—we will make it as a motion—whatever the proceedings show on that will, of course, be carried out, as you suggest, by the secretary.

I desire to say now that the time has arrived when I shall turn this gavel of authority over to the new president, and before doing that I desire to express my sincere appreciation

to the secretary of this Association as retiring president, for his untiring efforts and labors and correspondence, for I am in a position to know something about it in preparing for this, one of the best meetings this Association has ever held in all its history; and I want further, as retiring president, to thank all who contributed in any way to make this meeting a success.

It now affords me great pleasure to introduce to you the new president, Honorable Benjamin L. Purcell. (Great applause.)

(President Purcell came forward and took the Chair; ex-president Foust retired.)

REMARKS BY THE NEW PRESIDENT.

PRESIDENT PURCELL: Before adjourning the convention, my friends, I just want to say that I am deeply conscious of the honor you have bestowed upon me today. There comes a time in the lives of some men when some cherished ambition is achieved. By your action today that epoch has been marked in my life, and I thank you cordially and sincerely. I know well my limitations, and without your active and cordial co-operation and support it will be practically impossible for me to measure up to the high standards fixed by my predecessors, and particularly the distinguished retiring president. We know that these are times when every man must put his shoulder to the wheel.

More than all there are two things that I will mention to you, that I particularly desire to see accomplished during my term of office, but first and foremost is that this Association as a whole, and as individuals, will do everything in its power to help wipe German autocracy from the face of this earth, in order that American democracy may survive (great applause.) The second thing is that this Association may take its place in the state where its past record and its future actions entitled it to stand. This is a somewhat ambitious program, but we can successfully, I know, carry it out if we have the earnest support of every man in this Association with this feeling, idea and determination in his mind, that he is going to make the membership of the American Association of Dairy, Food and Drug Officials a distinction which will be sought by any man engaged in any line of work connected with food or drug control. We can just as certainly do this, my friends, as it is certain that our boys in a very short while will be marching down the streets of Berlin to the tune of "There's Going to Be a Hot Time in the Old Town Tonight." I thank you (great applause.)

MR. F. A. JACKSON: Mr. President, I believe at this time I am going to suggest that we pass the hat around for a nickel or a dime for this lady who has been so generous and kind in fixing up the chairs in the room, and so on.

SECRETARY NEWMAN: Somebody has taken care of that.

MR. F. A. JACKSON: Then I have nothing more to say.

SECRETARY NEWMAN: Mr. President, there have been some resolutions passed here, but I feel that I am possibly in a better position than some others to make this statement: If there has been any particular thing contributing to the success of this Association, it has been done through the desire and determined will of the retiring president that it should be a success. One of the gentlemen last night spoke about a determined cuss. If I wasn't of somewhat a cautious disposition I would use even stronger language than that. I don't think the year would have been anything like what it has been if it had not been for his untiring vigilance. He was active in our behalf all the time. Personally I want to thank him; and in closing I want to ask a vote of thanks to the retiring president for the best convention I ever attended. (Applause.)

EX-PRESIDENT FOUST: I want to express my sincere appreciation for this very generous feeling of good will. I now make a motion, Mr. President, that this Twenty-second Annual Convention of the Association of American Dairy, Food and Drug Officials be adjourned sine die.

(Seconded by Mr. Jackson.)

PRESIDENT PURCELL: You have heard the motion and the second, gentlemen. The meeting is adjourned.

AMONG THOSE PRESENT WERE

DELEGATES.

California, E. J. Lea, Director, Bureau of Foods and Drugs.

Connecticut, Thomas Holt, Dairy and Food Commissioner.

Florida, R. E. Rose, State Chemist.

Georgia, W. C. Dumas, State Chemist, Department of Agriculture, and P. A. Methvin, Chief Food Inspector, Food Department.

Illinois, John B. Newman, Superintendent, Division of Foods and Dairies, and G. W. Hoover, Chief, Chicago Station, Bureau of Chemistry.

Indiana, H. E. Barnard, Food and Drug Commissioner.

Kansas, F. E. Rowland, Assistant Chief Food and Drug Inspector (in charge of Division).

Louisiana, L. C. Scott, Food and Drug Department.

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Butter Standards.

Last month we reviewed a brief filed by the Dairy and Food Commissioner of Minnesota, the Secretary of the Minnesota State Dairymen's Association, and the Secretary of the Minnesota State Creamery and Cheese Factory Operators' and Managers' Association. This represented the makers of so-called "sweet cream butter"; at least, those who do not practice the neutralization of cream in butter making, and who believe that their product is, therefore, entitled to be known as the only lawful butter.

They say that the use of lime constitutes the resulting product adulterated under the law, and taxable at ten cents per pound. They also claim that it is impossible for their pure butter to compete with the neutralized article in the markets, and they ask that the latter be compelled to bear the label, "Renovated Cream Butter," in order that the consumer may buy it advisedly.

And now come the centralizers or neutralizers, who present a symposium, written by Professors O. F. Hunziker, F. W. Bouska, G. L. McKay, and by Mr. T. A. Borman, editor of the Kansas Farmer.

Professor McKay, who is now Secretary of the American Association of Creamery Butter Manufacturers, has heretofore filed a brief with the committee, which consisted almost entirely of an attack upon oleomargarine, and in defense of moisture incorporation as at present practiced. In this last brief, Professor McKay's article has almost entirely to do with the commercial aspects of the production of butterfat in the corn belt or mixed farming country. He shows what a waste of valuable food supply would result if for any reason it became unprofitable for the mixed farmer to

continue to produce butterfat for sale to the large centralizers. He says that the practice of adding lime to highly acid cream is what renders the present centralizing business possible, and he claims that the product has quality and keeping qualities entitling it to its place in the trade. He presents an elaborate questionnaire answered by the butter jobbing trade of the East, saying that the centralized butter gives excellent satisfaction. He endeavors to show that the centralizing creameries are an economic necessity. He does not wish it labeled "Renovated Cream Butter," as advocated by the Minnesota dairymen, because the term "would compel such butter to be taxed at least $\frac{1}{4}$ cent per pound; or, in other words, about 450,000 pounds of butter made in the United States would be taxed $\frac{1}{4}$ cent per pound. Would such a tax benefit the consumer or the producer?" One wonders whether the professor thinks the present tax on uncolored oleomargarine benefits either the consumer or the producer.

Professor McKay's article does not discuss the present United States revenue law covering "Adulterated Butter," although he quotes Attorney Keith for the Department of Internal Revenue as having told him that "a neutralizer used in cream for reducing the acidity is legal." This is interesting, as it is the first publication of any legal opinion given by an officer of the Government, and presumably was casually made in connection with a hypothetical question.

Professor McKay falls into his usual habit of ill-considered attack upon others, notably in his criticism of what "some native-born Danes are doing in this country." He also speaks slightly of the Danes at home and of Scandinavian-Americans. Presumably this "peevishness" results from the fact that a large

percentage of the Minnesota dairymen are of Scandinavian extraction. We think this is particularly unfortunate at this time, and unjust to a large body of our citizens whose sons are in their country's army and who are patriotically following every suggestion of the Government in its efforts to win the war. The butter used by our navy is largely made in Minnesota and is fairly representative of what that state can produce.

Professor McKay even suggests that he has "heard rumors" that this navy butter often exceeds the contractual limitation for moisture, and that the Bureau of Chemistry might well make tests in verification. It is difficult to say just what these features of his article have to do with the question before the Standards Committee. As is well known, it is difficult for the professor to refrain from attacks upon any who venture to differ with him.

Professor McKay suggests the following definition for the consideration of the committee:

"Butter is the clean, non-rancid product made by gathering in any manner the fat of fresh or ripened milk or cream into a mass which also contains a small portion of other milk constituents, with or without salt and coloring matter, and contains not less than 80 per cent fat, nor more than 16 per cent of water."

It will be noticed that the professor would extend the present definition of the Federal law to cover "the fat of fresh or ripened milk or cream." He evidently would license the use of limes or other alkalies by permitting "the gathering in any manner." It would seem that if, as the professor evidently thinks, the definition should be restated, it should be possible to describe what is permitted or forbidden more specifically, and to advise what methods or ingredients were in contemplation with greater frankness for the information of the public and those who are to administer the law.

Professor Hunziker's article ably sets forth why, in the author's opinion, the neutralization of cream in buttermaking "is necessary and justifiable"; also why it has no logical or justifiable connection with the consideration of butter standards and definitions. This argument is directed primarily to the point that neutralization does not remove rancidity. This is, of course, intended to justify the manufacture of limed butter without the payment of the 10-cent tax which the law imposes upon adulterated butter. "Cream seldom, if ever, is rancid; hence there is no rancidity to remove." It will be remembered that the law enumerated "the use of any acid, alkali, chemical, or any substance whatever * * * for the purpose or with the effect of deodorizing or removing therefrom rancidity."

Mr. Hunziker is manager of the manufacturing department of the Blue Valley Creamery Company. He presents many arguments as to the wholesomeness of farm separator cream, the difficulties of manufacturing butter from cream of high acidity, the manner in which the cream is neutralized, facilities for proper pasteurization, and defends the quality of centralized butter.

Aside from the somewhat forced effort to eliminate the question of rancidity, the argument in this paper leaves little to be asked. He also presents a definition which, like that of Professor McKay, is carefully but ambiguously worded, the evident purpose being to defend and perpetuate present practices.

Professor Bouska, who is now scientific and but-

termaking expert for the American Association of Creamery Butter Manufacturers at Chicago, presents as his contribution to the symposium a very technical treatise on the physiology of centralized butter. He deals elaborately with the various processes of fermentation and decomposition.

In the fourth article, Mr. Borman presents an excellent argument on the utility of the hand cream separator and the part it has played in the development of the dairy business.

The joint committee has now in its hands a considerable literature bearing upon the subject of modern commercial buttermaking, representing various views, mostly selfish. The chief difficulty of the committee appears to be the present Federal law with respect to adulterated butter, passed August 2, 1902. The law was passed by the dairymen as a part of their effort to destroy the oleomargarine industry. At that time renovated butter and various other compositions were regarded as butter substitutes, and so penalized by taxation. The viciousness of the principle upon which wholesome foods are taxed to restrict them is no longer seriously questioned. However, the creamerymen have always been able to make Congress believe that they represent a large farmer vote and efforts to repeal or amend these laws have proven futile.

In the course of time the creamerymen themselves, driven by competition and lured on by high prices, have adopted many practices which may seriously be considered as coming within the proscriptions of this law. There is the matter of moisture incorporation, and there is the matter of the use of alkalies and chemicals to deodorize and remove rancidity.

In addition to the briefs filed, the committee has held extensive hearings, one at St. Paul on June 19, 1918, and one at Washington on June 24, 1918, which fully explained present practices and the positions of opposing factions. If these proceedings and briefs could be printed and compiled into a handy volume, and so made available to that portion of the public interested in the food supply, it would probably result in the formation of public opinion upon which proper adjustments could be made.

Adulterated Olive Oil.

Food inspectors have been instructed by the officials in charge of the enforcement of the Federal Food and Drugs Act to inspect interstate shipments of olive oil, in order to prevent the sale in interstate commerce of cheaper vegetable oils under the name of olive oil. Very little olive oil is now being imported, say the officials, and the domestic olive oil is not sufficient to supply the demand. The abnormally high price of genuine olive oil has tempted unscrupulous dealers to mix cheaper vegetable oils with a little genuine olive oil and to sell the mixture labeled as olive oil. Cottonseed oil, corn oil and soy-bean oil are the principal substitutes used.

Several seizures have been made and a number of prosecutions are now pending in the Federal courts as the result of finding in interstate commerce products labeled "olive oil," which upon analysis were found to consist largely of cottonseed oil. Cottonseed, corn and soy-bean oils are palatable oils which are not injurious to health and there is no objection to their sale as food when properly labeled, say the officials. Their sale as olive oil, however, is a fraud, and their shipment in interstate or foreign commerce labeled as olive oil is a

violation of the Federal Food and Drugs Act. The sale of cottonseed, corn or soy-bean oils under the name of olive oil is also a violation of the laws of most States. State and city food inspectors are co-operating with the Federal food inspectors in stopping this form of adulteration.

Output of Soft Drinks and Mineral Waters Curtailed.

The War Industries Board has issued a ruling that, effective November 1, 1918, the production of non-alcoholic beverages (other than near beers which have already been prohibited after December 1, 1918) including the manufacture of fruit juices, waters, concentrated extracts, syrups and carbonic acid gas be curtailed on the basis of fifty per cent (50%) per annum, based on the production for the calendar year 1917; that is, no month's production shall exceed 50 per cent of the production of the corresponding month of the previous year. Grape juice, cider and loganberry juice products of this year's harvest may be produced, but the restriction must apply to the year 1919.

The Rain Damage to Western Dried Fruit.

In these days of critical necessity for the conservation of all of our food resources it is with a feeling of consternation and no little chagrin that we read of the tremendous losses of raisins, prunes, dried apples, apricots and figs which have occurred in the San Joaquin Valley of California, as a result of unusually heavy rain storms. According to good authority, the situation in the dried fruit industry of California is chaotic; the demoralization of the industry is almost complete.

The news at this critical time of the sheer loss of millions of dollars' worth of vitally important foods cannot escape the notice of all who are interested in the conservation of food, and cannot fail to elicit the natural inquiry, why and wherefore? Unbelievable as it may seem, the fact remains that in these days of efficiency and conservation the dried fruit industry of California and the West still employs the most primitive methods of operation.

Prunes and raisins are made by exposing plums or grapes to the natural drying effect of the sun and wind and the same applies to apricots, apples and figs. The fruit is placed on trays by hand and the trays are placed in the open fields for drying. In addition to the extremely detrimental exposure to infestation and contamination from dust and other wind-carried bodies, stray animals and birds, the process is long and uncertain, depending entirely upon the vagary of the weather.

From time to time in the history of the industry similar catastrophes have occurred and will, of course, continue to occur unless steps are taken to obviate the possibility of such recurrence. Why have not the powerful organizations which control the activities of our domestic dried fruit industry availed themselves of the aid offered them by the process of artificial dehydration, the employment of which would have rendered impossible such a calamity?

Artificial dehydration, accomplished by the use of highly developed and efficient machinery, as contrasted with the crude and primitive methods of our ancestors, is now an actual accomplishment both abroad and in this country. The period of experimentation is over and from among the ideas and suggestions promulgated within the last few years there have developed a few systems of dehydration which are

standardized, practical, and which are now in everyday, commercial operation, producing tons of uniformly superior products daily, at less actual operating expense than the primitive equipment now employed.

Even were it *more* expensive to dry artificially such fruits as raisins, prunes and the rest (which is *not* the case) and were the cost of installing mechanical dehydrating equipment many times what it actually is, any possible economy which might be claimed for the old existing methods has been more than nullified for years to come by this single loss.

Those who have at heart the best interests of California and the nation, and especially those who are concerned with the dried fruit industries, can well afford at this time seriously to consider the installation of sufficient mechanical equipment to handle the coming season's production.

The general installation of dehydrating equipment in the West will not only prevent such vast losses as that of the present season, but will serve to stabilize and firmly establish the industry, eliminate the great element of risk which now predominates and, what is perhaps as important as all else combined, acquit them of the charge for which they can now be fairly held—the charge of clinging to archaic methods in this day of progress and development.

Sugar Beet Crops, Aug. 1, 1918.

Although the estimated sugar beet crop for this year in the United States is 6,359,000 tons, as against 5,980,379 tons in 1917 and 6,228,256 tons in 1916, the general condition of the crop on August 1 was 88.6, as against a ten-year average of 91. Improvement in the national crop during July is rated at 1.7 per cent.

In Colorado, which supplied 30.5 per cent of the Nation's sugar beet crop in 1917, the condition was 90, as against 89 for the ten-year average, with the crop for 1918 estimated at 1,490,000 short tons, according to the August crop report of the U. S. Department of Agriculture. Last year the crop was 1,857,649 tons, from which 234,303 tons of sugar were extracted.

In California, which last year produced 27.3 per cent of the Nation's sugar beet crop, the condition was 86, as against 91 for the ten-year average. The crop is estimated at 1,041,000 tons, while last year it was 1,331,548 tons, yielding 209,325 tons of sugar. According to *Facts About Sugar*, published by Domestic Sugar Producers, Inc., the yield per acre will be better than last year's.

In Michigan the crop this year will be 992,000 tons, according to the Department of Agriculture estimate, while in 1917 it was but 524,195 tons. Growth recently has been slow, because of insufficient rains, according to Willet & Gray's *Weekly Trade Journal*, under date of August 29. Yet crop condition on August 1 was rated at 89, as against 86 for the ten-year average. In Ohio the crop this year will jump to 320,000 tons, it is expected, as against 219,931 in 1917, while the increase in Utah will be from 762,028 to 1,035,000 tons.

Crop conditions in other sugar beet raising states are as follows, with the first figure indicating condition August 1 and the second, the ten-year average: Idaho, 90, 93; Indiana, 83, 84; Illinois, 91, 89; Wisconsin, 94, 88; Minnesota, 95, 87; Iowa, 90, 91; Nebraska, 90, 87; Kansas, 90, 82; Montana, 85, 92; Wyoming, 95, 95; Washington, 45, 94. The total crop of the ten states last-named above is estimated at 973,000 tons, as against 972,959 tons in 1917.

Butter Situation to Be Investigated.

The Food Administration is turning the full power of its enforcement machinery against dealers who are taking advantage of the present stringency in butter supplies and are reaping heavy profits from the rising market. Its inspectors throughout the country have been instructed to center their work upon investigations of butter operations and to obtain a close check upon the recent activities of dealers.

Some manufacturers and dealers who had stored late butter have been taking advantage of a rising market to remove their goods and to sell as fresh butter on account of an advanced market. This is a clear violation of Food Administration rulings, which state that butter, both fresh and storage, shall be sold at prices not to exceed stipulated margins of profit over cost. The dealer is not allowed to sell on the basis of replacement value. This eliminates all possibility of speculation, as the dealers in butter are not allowed to profit by abnormal advances in market quotations.

All Federal Food Administrators have been instructed to take decisive measures in their states to keep a close check on butter operations and to take vigorous action wherever violations are disclosed. The inspectors have been notified that they are expected to center their attentions upon these operations and to make a thorough investigation of the entire butter situation.

Canada Labor for Fixed Food Prices.

The effective control of the prices of essential foodstuffs, cereals, meats, etc., by the Dominion Government is demanded in a resolution adopted at the Trades and Labor Congress. Attempts were made by the radical factions attending the Congress to secure endorsement for an amendment which urged that all wages should be increased when the price of commodities went up, but the attempts were unsuccessful. A motion, which was dropped for that ultimately carried, asked for the appointment by the Dominion Government of a commission to fix the prices of necessities of life.

The Congress also adopted a resolution calling for the nationalization of the practice of medicine and all hospitals.

The debate on the price of food was initiated when a motion sent up to the Congress from the Hamilton Trades and Labor Council asked for a commission.

R. J. Jones, Winnipeg, amended the motion so that it demanded that when food prices soared, the members of the unions affiliated with the Congress should get a corresponding increase in wages.

P. M. Draper, Ottawa, then introduced the following amendment:

"The fundamental source of the discontent and unrest that agitate the public mind and are constantly provocative of dislocation of trade and industries, as well as being a menace to the peace and prosperity of the people of Canada, is the disproportion that exists between the incomes, revenues, salaries or wages and the exorbitant and constantly rising prices of foodstuffs and necessities of life, be it resolved: That it is expedient that the Government of Canada should immediately assume full and effective control of all prices of essential foodstuffs, cereals, meats, etc., that such fixed prices be not more than those now existing in each case, thereby preventing further increases in the cost of these essential articles to the consumer,

assuming that present prevailing prices are ample to stimulate production; that such control be exercised effectively, uncompromisingly, and with penalties attached to the violation of such regulation as from time to time are established by the Government."

Mr. Draper said he thought the time had arrived when the Government should assume full and effective control of commodities as had been done in Great Britain. He was against the commission idea, because they had had commissions before and they had not been altogether satisfactory.

J. Wheatley, Bank Head, Alberta, explained how successful the wage-raising system introduced among the miners in his district had been. He said, under contract with the company they worked for, the men got increases every time the price of food was raised. It had meant \$1,250,000 to the miners in extra money in a few months.

Mr. Draper's amendment was substituted for that of the Hamilton Trades and Labor Council and carried by a large majority.

Containers Standardized.

Manufacturers of syrup and molasses have promised to do everything in their power to assist in the conservation of tin. Their product, until the need for conservation passes, will be packed in only three standard sized cans, they promised at a recent conference with the United States Food Administration. All small and odd sizes will be discontinued, only 2½, 5 and 10-pound containers being used. Packing in small cans calls for needless consumption of steel, tin plate, labor and transportation facilities. A one-pound can, for instance, represents a saving in tin of about 20 per cent over four four-ounce cans. In addition, the expense of filling and handling the smaller container is practically equal to that of the larger one, which has the added advantage of requiring less shipping space for equal bulk of contents.

Chocolate and cocoa manufacturers have also signified their willingness to effect substantial savings in tin and steel by packing their products in containers made of other material, as set forth in resolutions adopted by the Committee of Cocoa Bean Grinders and Consumers, in conference with the Food Administration. Manufacturers will adopt new containers not made of tin or any other metal as soon as present stocks are used up, which must not exceed a period of five months at most, according to the resolutions. These containers will be square or oblong, instead of round, to save packing space. It was further recommended that cocoa and chocolate, sweetened or unsweetened, in powdered form, shall be put up in packages not smaller than one-half pound, or in packages of one, five, ten, twenty-five, fifty, or one hundred pounds, and barrels and cases. This eliminates certain sizes and will effect a saving of labor and material.

Representatives of the alimentary paste industry agreed to aid in the campaign for conservation of war necessities. Their products—macaroni, spaghetti and noodles—which heretofore have been packed in numerous sizes and styles of packages, will be put up in three standard sized packages. Macaroni and spaghetti will be put out only in eight and sixteen ounce packages, and when sold in bulk will be available only in ten and twenty-two pound boxes. Noodles will be sold only in four and eight-ounce packages. As a conservation measure in saving paper, labor and shipping space these manufacturers have agreed that these standard packages shall be completely filled.

Dried Milk Powder

A REVIEW OF BRITISH EXPERIENCE.*

THE local Government Board of Great Britain has recently issued a series of reports under the general classification "Food Reports No. 24" upon the preparation, composition and nutritive values of dried milk powders, with special reference to their use in infant feeding. It is stated that this article is coming into rather large use in the preparation of certain foodstuffs and in the feeding of infants. In view of these facts and of certain claims which have been made as to the advantages of this product over ordinary cow's milk, especially from the point of view of freedom from bacteria of a dangerous sort, a somewhat extensive inquiry into the entire subject has been deemed advisable.

HISTORY, MANUFACTURE AND USES.

The first branch of this inquiry related to the use of dried milk in infant feeding and was carried out by Dr. F. J. H. Coutts with the assistance of Prof. Delépine. A brief history of dried milk and of its method of preparation is first given. It is stated that as early as 1868 "desiccated milk" was an article of commerce. Since that time, and especially during the past 20 years, considerable advance has been made in the methods of preparation, the general purpose being to secure a dry residue by evaporation at the lowest possible temperature and in the shortest time. Most of the processes employed use one or another form of revolving heated drum, upon the surface of which a thin milk layer is spread and from which the dried product is scraped. The most recent processes inject a stream of partially condensed milk into a heated chamber in the form of a fine spray, the evaporation taking place in the air and the dry powder falling to the floor. In the factories the conditions of manufacture, as regards general cleanliness, were found to be excellent. The author, however, does not agree with the commonly expressed view of the desirability of small-scale manufacture upon the farm. He found in many such cases that the most elementary precautions as to cleanliness were being neglected. The importance of placing this industry under the supervision and control of public health officials is emphasized. About 5,000,000 pounds of milk powder were imported into England during 1915, of which one-half came from the United States, and the importance of some form of guarantee as to the conditions of manufacture of imported products is also noted.

The market product is of three main varieties, namely full-cream, half-cream and skimmed. Certain firms, however, make other preparations, including some with additional cream. Certain preparations also contain added cane sugar.

Dried milk is used as a basis of certain proprietary infant foods. It is also employed in admixture with cocoa and sugar, with egg powder and sugar as a custard powder, and in various other combinations. Dried milk is said to be used extensively in many of the industries, particularly in the baking and confectionery trades. Reference is also made to a so-called synthetic dried milk made entirely from vegetable materials. The use of the word milk in this connection is considered rather unfortunate. The ethics of labeling and advertisement are discussed, and the investigations

showed on the whole a reasonable regard to accuracy, although in some instances advertisements were decidedly objectionable.

PHYSICAL AND CHEMICAL CHARACTERISTICS.

The literature on the physical and chemical characteristics of milk powders is quoted at length. Dr. Monier-Williams reported in 1909 upon a sample of whole milk powder, dried upon a drum at $100^{\circ} +$, C. Upon mixing with a small amount of water, stirring until homogeneous, and then adding cold, previously boiled, distilled water to make a 12.5 per cent solution, a product was obtained which did not have the homogeneous appearance of fresh milk. It had a slight smell of boiled milk and the fat separated quickly as a yellow layer at the surface. The curd produced by rennet was flocculent and finely divided; that produced by acetic acid was similar to that produced from normal milk. The reconstituted milk did not contain the active enzymes of fresh milk as shown by the peroxidase reaction. The fat globules viewed under the microscope were in most cases larger than those in fresh milk and there was observed a considerable amount of undissolved proteid. A considerable proportion of the lactalbumin had been converted into a form insoluble in magnesium sulphate. The milk sugar had undergone no alteration. A somewhat extensive compilation of various analyses of milk powders is given. Among the foreign substances found are cane sugar, bicarbonate of soda, various preservatives, coloring matter, starch, foreign fat, dirt, and traces of certain metals.

BACTERIOLOGY.

A similar comprehensive review of the literature of the bacteriology of dried milk is given. In view of the small amount of information available, a further investigation was made by the author and 42 samples of commercial preparations were submitted to the Lister Institute. Ten per cent solutions of the powder showed aerobic bacterial growing at 22° C., ranging in numbers from 100 to 757,000 per cc., and at 37° C., from 100 to 892,000 per cc. The results for the most part, however, ranged under 10,000 per cc. in each case. The presence of streptococci, enteriditis, and *B. coli* was recorded in many of the samples. There was no evidence of tuberculosis in guinea pigs inoculated from these samples.

Investigations made at the factory indicated an enormous reduction in bacteria during the process of drying and a subsequent recontamination during handling and packing. The experiment was tried of running through the drying process a specimen of milk from a tubercular cow and one heavily inoculated with a potato culture of tubercle bacilli. Subsequent inoculations of guinea pigs indicated that living tubercle bacilli may survive the process of manufacture of dried milk, but "the course of the disease produced by the bacteria was very much slower than that of the disease produced in guinea pigs inoculated with the same amount of untreated tubercular milk." No evidence of tubercular infection was obtained by feeding experiments upon four young rabbits.

INFANT FEEDING.

Upon the basis of a review of the experience of many authorities and of information obtained by personal visits to several large infant feeding stations, the

*Reprint from the Public Health Reports, Vol. 33, No. 26, June 28, 1918, pp. 1052-1055.

opinion is expressed that when breast feeding is impossible dried milk is a very valuable food for infant feeding. This statement applies, however, only to milk of recent manufacture, made from a good quality of cow's milk under hygienic conditions. It is probably no better than and perhaps slightly inferior to fresh cow's milk, but under the present conditions in cities, and especially in hot weather, it is often desirable to use it in preference to the latter, and this can be safely done without fear of prejudicing the health and progress of the infant. Many infants suffering from digestive troubles show excellent progress on dried milk. Scurvy and rickets are rare in infants fed on this preparation, although the occasional use of fruit juice is desirable.

Increasingly large quantities of milk powder are being used in maternity and child welfare stations supported by public health authorities and voluntary agencies in England and Wales. A list is given of some 75 districts, including some of the principal cities of Great Britain, in which this is the case. At Leicester a dried-milk depot is open every day and consultations are held twice each week. The milk powder is supplied in packages with directions and in three grades, namely, full cream, three-quarters cream, and half cream. The very poor obtain this material at less than cost or even free, while the average purchaser pays a slight margin of profit. Similar details of the operation of some of the other large welfare stations are given.

For administrative purposes, under the "Sale of food and drugs act," milk powders are classed with

condensed milk. An extensive bibliography closes the section.

NUTRITIVE VALUE.

This section is a report of the investigation conducted by George Winfield, M. A., on behalf of the medical research committee. The conclusions are based in part upon observations at infant welfare centers in Leeds and Sheffield and in part on animal feeding experiments. The growth curves of children fed exclusively upon dried milk from birth closely resemble the average growth curve of breast-fed children, although at somewhat lower levels by reason of the more delicate condition of these children. The conclusion is reached "that cow's milk, during the process of desiccation, loses none of the characters which are necessary for the support of normal growth in infants." Teething and walking begin at normal ages, and there is no greater liability of rickets and scurvy. The experiments on rats led to the conclusion that dried milk as a sole food maintains an animal in good health and permits normal growth for periods which long outlast those corresponding with infancy and early childhood in the human subject.

EXAMINATION OF MILK POWDERS.

This section of the report, prepared by Sir James Dobbie, Government chemist, presents in detail the methods of chemical examination employed and the analytical results obtained upon a large number of commercial samples of all sorts. These results are summarized in Dr. Coutts' report.

Food Program for Relief in Belgium.

Mr. Hoover recently stated that the following program for the next twelve months had been arranged for the relief of the 10,000,000 Belgians and French people now within territory occupied by the Germans. In addition to the fleet of vessels controlled by the Relief Commission, the United States and Allied Governments are placing at the disposal of the Relief Commission 200,000 tons of shipping recently secured from the Swedish Government for non-war zone purposes. With this shipping capacity, together with some minor additions to be effected by the Relief Commission, the following amounts of foodstuffs are to be provided during the next twelve months:

	Bushels.
Wheat, barley, rye and corn for bread purposes	42,500,000
Beans	2,200,000
Rice	3,300,000
	Pounds.
Corned beef	26,400,000
Pork products	277,200,000
Soap	66,000,000
Coffee	26,000,000
Food for the children.....	
Cocoa	18,000,000
Condensed milk	55,000,000
Sugar	40,000,000

This amount of food, together with the native produce, gives an average ration amounting to about 2,000 calories—about one-half the consumption of the American people.

This program is estimated to cost during the twelve months, for purchase and transportation, approximately \$280,000,000. The finance has been arranged on the basis of advances to be made by loans from the United States to the Belgian and French Governments in

amounts sufficient to pay for the material purchased in the United States. The British and French Governments are advancing in Europe the sums necessary to meet the expenditures made there for shipping and for foodstuffs coming from quarters other than the United States.

The administration of the relief work during the coming year will be, as heretofore, carried out under the guidance of the Commission for Relief in Belgium. The foodstuffs in the United States are being purchased by the United States Food Administration in behalf of the Relief Commission, and are delivered through the commission up to the Belgian frontier, where the distribution and rationing is taken charge of by Belgian and French organizations, which were organized by the Americans in the early stages of the war.

The security of both imported and native food production from German requisition is guaranteed by the Dutch and Spanish Governments, who maintain agents in the occupied area to see that the production and distribution are not interfered with by the German army.

Condensed Milk Containers Standardized.

Canners of evaporated and condensed milk have agreed to lend their influence in the conservation of tin plate. Evaporated and condensed milk, which heretofore has been put up in four sizes, namely, 6, 12, 14 and 15 ounce cans, will, when the supply of tin plate now on hand is exhausted, be marketed only in 14 and 15 ounce cans. The elimination of the 6 and 12 ounce cans, commonly termed "baby" and "family" sizes by the trade, will effect a saving of 10 per cent in the amount of tin plate used in this industry, exclusive of that which is needed by the army and navy.

Cocoanut Products—A Growing Industry

By THE EDITOR

WHEN we were young we were told that the hardy mariners who ranged the South Seas in quest of new sensations and new products were in the habit of garnering cocoanuts by means of the simple expedient of hurling rocks at the monkeys in the palm trees, said monkeys joining in the fun by hurling in return luscious cocoanuts laden with both "milk" and "meat." Whether or not the somewhat fantastic tale be true, it is a fact that in these later years the stately palms, which give a picturesque touch to the marine landscape, if such an expression be permissible, of the always fascinating South Seas, are as nearly as possible a source of all that mankind needs in order to subsist and be happy.

In this country we know more of the edible products than of the inedible, important though the latter be to the natives of Polynesia. Especially during the last few years has cocoanut oil been incorporated in our diet with a celerity which speaks well both for its intrinsic value as a food and for our excellent commonsense in accepting a good product, although new. At present there are on the market many compounds in which cocoanut oil is an important part, such as nut margarine of many brands and slightly varying formulas and, in a class by itself, *Hebe*—a compound of cocoanut oil and skimmed milk. The list is growing constantly and it is well that it is so, as cocoanut oil is an excellent food and, because of its abundance, will probably always be sold at a reasonable price.

Some time ago there appeared in *The Manufacturers' Record* an article by William L. Hornaday, a scientist of national reputation, on the subject of the cultivation of the cocoanut tree. Mr. Hornaday pointed out that:

"Cottonseed oil manufacturers of the Southern States are becoming linked up with the islands of the South Seas in a most remarkable way. Several of them are using their plants for pressing oil from copra, which is the dried meat of the cocoanut, and the new industry promises to expand rapidly.

"The utilization of cottonseed oil mills for manufacturing cocoanut oil will, it is expected, result in the investment of much American money in cocoanut plantations and the establishment of close trade relations between the South and the islands of equatorial seas. The development of the new trade is due to the war, it is stated by cottonseed oil manufacturers. They point out that with the building up of the American merchant marine there is every reason to expect that the trade in copra will continue to increase during the years to come. Before the war began, comparatively small quantities of copra were imported to the United States.

"Almost unlimited opportunities are offered for the development of the cocoanut industry in the islands of the South Seas. In the Fiji, the Solomon, the New Hebrides and other groups only the outer fringes of the islands have been touched by the hands of civilization.

"For many years the copra trade of the islands went chiefly to England and Germany, notwithstanding the fact that from a transportation standpoint the United States was the logical market. Prior to the great war enormous quantities of cocoanut butter were con-

sumed in Germany and France and in lesser quantities in England.

"To the growing of cocoanut is largely due the advancement of civilization in many of those remote islands. As an evidence of this fact, it may be cited that one British concern owns a cocoanut plantation of 100,000 acres in the Solomon Islands, and the very borders of this plantation are inhabited by natives who still practice cannibalism.

"When once established, the industry insures a lifetime of profit and ease for the grower of the product. The trees require practically no attention from the time their growth begins until the deadening commences, nearly 100 years thereafter. The bearing period of the cocoanut tree is 70 to 80 years. The first cocoanut may be expected in about six years after the original planting. The tree comes into full bearing about the twelfth year, and from then on until its life is ended it gives an average annual yield of about 50 nuts. The average yield of copra per acre is about one-third of a ton. It was selling at the beginning of the war for about \$150 a ton in the London market. The price has advanced considerably since.

"The cost of operating a plantation of cocoanut is exceedingly small. All of the labor is performed by island natives, and the ordinary expenses of gathering, cutting and drying the crop of nuts do not exceed \$50 for each 100 acres. This cost is much more than offset upon many of the plantations by the utilization of the land also for the grazing of cattle and sheep. The preparation of the copra for market is very simple. The nuts are allowed to fall naturally, and at intervals of once a month, and sometimes not oftener than once every two months, the nuts are collected into piles upon the ground. Each pile contains about 100 nuts.

"The laborers then split the nuts open lengthwise with a blow from an axe. The kernels are removed with two or three dexterous cuts of a small knife. This is the copra in its raw state. The ordinary daily task of each laborer is to split and clean 600 cocoanuts. The empty shells are burned upon the ground, the ashes from them being regarded as good fertilizer for the trees. The meat of the nuts is placed in bags and conveyed to the platforms for drying. When thoroughly dry the finished copra is packed into bags for export.

"Nuts for planting are carefully selected. When placed in piles and exposed to moisture they commence to sprout in a few months, and when the sprouts are three or four feet long, the nuts are placed in holes in the ground, generally about 30 feet apart. It is stated that the cost of establishing a cocoanut plantation will run close to \$100 per acre. This includes the cost of clearing the land of its growth of underbrush and of keeping it clear of new growth during the period that the trees are arriving at the producing stage. It also includes the cost price of the wild land, which ranges from \$1 to \$5 per acre.

"The uses of the cocoanut tree and its fruit are many. To the native of these islands it may be said to provide all the necessities of life—food, shelter and clothing. The full grown tree attains a height of fully 90 feet, and the timber may be used as logs for

bridging streams and for house building. The trunk of a tree may be split into lengths, which bend readily, and in this form the timbers serve useful purposes in house construction. The plaited leaves are used for thatching the roofs and for making the outer covering of the walls. They are made into beds to sleep on, into mats for the floor and they serve as plates to eat from. Beautiful baskets and fans are made of the leaves.

"The flesh of the nut forms an excellent and nourishing food; it produces oil for cooking, for mixing native puddings, for lighting the house and anointing the body. The milk forms a palatable and refresh-

ing drink, especially that from the young nut. An industry of no little importance among the natives of the different islands is the manufacture of twine, known as sinnet, from the husk of the nuts. This material is used chiefly to tie the timbers together in the construction of native houses, no nails being used in such work. Twine and rope of any size up to a towing line are made from the fiber. The "cabbage," as the soft central part of the head of the cocoanut palm is called, can be made into a delicious salad, though few persons can afford to sacrifice so valuable a tree for such a purpose."

The Sugar Outlook After the War

AT the present time, according to the sugar men of the West Indies, the thoughts of sugar producers are largely concentrated on the conditions as regards sugar which will prevail after the war. The difficulty of prognosis is naturally enormous, and much will depend upon the fiscal conditions which will follow the declaration of peace. The question very largely hinges on the future of European beet. In every European beet-growing country there has been an industrial upheaval, with a reduction of sugar crops, due partly to want of labor, partly to the destruction of sugar factories, but mainly to the necessity for the cultivation of other provisions. The points to be considered are: Will the pre-war crops be again realized? Will they be extended?

The chief European sugar-producing countries are Germany, Austria, Russia and France. In the first two of these the pre-war factories remain standing, in the latter it may be expected that a good many of those in Poland have been destroyed, while we know that French factories have been sacrificed.

Germany, with its great powers of output, naturally occupies an important place in the consideration of the subject. Labor will inevitably be scarce, the utilization of women for labor purposes hardly making up for the scarcity of men. On the other hand, Germany will strain all her industrial powers to produce sugar for her own purposes, and will endeavor to export sugar for the purpose of bringing grist to the mill in the shape of money into the country. This opens up a further question. With the world in arms against her, will she be able to export sugar at anything but a ruinous figure, except in the remote contingency that peace will enable her to make such terms as will place her produce on the Allies' markets on equal footing with the produce of the Allies? Without venturing to prophesy, it looks as if this will not be the case, in which event it may be taken that Germany will not export sugar from the continent, as she did before the war. Austria will be in the same position as Germany, and her exports are not likely to extend beyond supplying comparatively small eastern demands.

The future position of the Russian sugar industry is very doubtful. If Germany acquires the commercial control of that country it is quite possible that she will discourage the production of sugar in Russia beyond a certain extent, with a view of providing a favorable market for her own surplus sugar. The Government cost of production is far below that of Russia, and duty-free German sugar in Russia would

be a considerable damper to the Russian industry. The other European beet-growing countries will probably return to their previous output, but in no case will their excess sugar be an important asset in the world's market. There may be a certain amount of beet sugar grown in the United Kingdom.

The other large beet-producing country is the United States. Here the output will certainly be increased.

It may be taken, therefore, that the post-war production of beet sugar available for the world's supply will be much less than before the war for many years at least, and if cane sugar production goes ahead permanently it is not likely to recover its lost position.

Turning to cane producing countries, a prime factor in supply will be, as it now is, Cuba. It is not likely, however, that the output of that country will very much exceed $3\frac{1}{2}$ or 4 million tons. Transport and labor trouble will probably make this the economic limit. As the American beet sugar industry increases in volume, there will be a smaller market in the United States for Cuban sugar, the increasing excess being thrown on the world's market.

It must be remembered that Cuba is in the circle of the Allies, and will receive preferential treatment in Great Britain, the great market for the world's sugar, if any preference is given at all in her customs tariff to the produce of the Allies.

Louisiana, Hawaii and Porto Rico have reached their limit, but the Philippines may be looked upon as likely to increase their output, and the same may be said of Formosa.

There is no indication of a change in amount of production in the Argentine and the Brazils. The Venezuelan industry may develop.

Java, the great sugar-producing center of the East, is fast approaching her maximum of output, and is not likely to produce more than $1\frac{3}{4}$ million tons at the most.

India has large possibilities in the shape of sugar production, but is a large importer and does not seem, for some internal cause, to be able to extend her sugar output.

The future of sugar in China has also to be reckoned in the calculation. There are signs that the Chinese are giving their serious attention to its production, and if they only increase their production to the extent of their imports, the extra amount will be an important item in the world's production.

The supply from the British Empire will depend largely upon the treatment accorded sugar in the customs tariff of the Empire. To supply its want, basing consumption on the pre-war figure, $5\frac{1}{2}$ million tons are required. It now produces $3\frac{1}{2}$ million, and is capable of turning out 7 or 8 millions.

Taking all things into consideration, it is evident that there will be a scarcity of sugar for some time after the war. How long this will continue depends to a great extent on the fiscal policy of the British empire. But no matter what this be, the survival will be with those producers who can produce most cheaply.

Mr. Hoover's Views of Chicago Packers.

In view of the drastic recommendations of the Federal Trade Commission regarding the handling of the big Chicago packing houses, and the persistent rumors that Mr. Hoover is strenuously opposing any such measures of remedy, it is interesting to note what Mr. Hoover told his British food confreres during his recent visit there. According to *The Journal of Commerce*, Mr. Hoover plainly stated his gratification with the way the American packers were participating in the great task of the hour, according to the food authorities in England.

Sir William Goode, liaison officer of the Ministry of Food with the United States, was interviewed recently as to the rise in meat prices and its relation to the American meat packers. "I have quite recently discussed this matter thoroughly with Mr. Hoover," he said, "who stated that ever since last October—that is, soon after the American Food Administration was legalized by Congress—regulations have been imposed upon the meat packing industry which limit the profits of the larger packers to considerably less than one halfpenny per pound upon their animal products.

"Mr. Hoover pointed out that even in cases where the maximum profit is obtained by the American packers, it is less than the packing profits allowed under the regulations controlling most of the European animal products. It is also well to remember that the increase in the cost of ocean transport on these food supplies amounts to several times the profit per pound allowed to the American packer by the United States Food Administration. Thanks to the control exercised by Mr. Hoover, all the Allies purchase their meat on the same terms as those paid by the American army and the American consumer.

"The control of such a large and centralized industry as the American packers is a problem of intense complexity, and one of constant anxiety to the American Government; but as Mr. Hoover emphasized, the problems involved are at the moment almost solely of domestic interest to the United States because even if drastic legislation were substituted, as was recommended in the recent report of the United States Federal Trade Commission, for the existing methods of food administration control, it would not be likely to reduce the price of meat products by an amount that would be appreciable to any European consumer. This is due to the smallness of the margins of profit on which the packers by vast turnover are able to transact their operations. In Mr. Hoover's judgment, the reasons for the high cost of meat products from the United States are simply the additional cost of production to the American farmers and the additional cost of transportation."

The Nation's Food Bill.

The Food Administration has received inquiries from many quarters as to the actual increase in cost of food during the past year. These increases have been greatly overestimated by laying too much emphasis on special cases.

The table given below is a computation of the National Food Bill for each three months, beginning with the second quarter of 1917, down to the second quarter of 1918. It is based on taking the total food consumed by the Nation divided into the items of breadstuffs, vegetables, meat, dairy products, etc., at the average wholesale price for the quarter, and thus arriving at what the nation as a whole actually expended. The figures show that during the last twelve months there has been an increase in the national food bill per quarter from \$2,563,600,904 to \$2,693,751,871, or $3\frac{1}{2}$ per cent. While this is the whole Nation's expenditure at the wholesale prices and thus clearly indicates the national trend, it does not follow that there are no local variations. In those sections where there has been a great local increase in population, there has been a disturbance of distribution and prices have increased to a larger per cent. On the other hand, there are corresponding sections of the community where actual decreases or no increase have taken place. The cost of rent, clothing, transportation and other items of living have advanced several times as much as the aggregate increase in the cost of foodstuffs. There has been more than a 35 per cent increase in prices paid to the farmer, but also a reduction of speculation and profiteering and narrowed margins between farmers and wholesale prices under food regulations.

	—2nd Quarter 1917—		—3rd Quarter 1917—	
	Total Cost in Dollars.	Cost per Capita.	Total Cost in Dollars.	Cost per Capita.
Breadstuffs	\$314,906,915	\$3.0383	\$393,732,314	\$3.7844
Vegetables	330,709,717	3.1905	152,884,830	1.4694
Sugar	200,674,663	1.9363	205,527,930	1.9754
Fruits	78,361,156	.7559	71,290,290	.6852
Oils and Nuts....	52,302,765	.5046	58,304,496	.5604
Fish	26,140,445	.2522	26,326,613	.2530
Meats	764,882,651	7.3804	777,233,981	7.4705
Poultry and Eggs.	221,956,895	2.1417	226,038,723	2.1726
Dairy Products...	573,665,667	5.5354	584,068,678	5.6138
Totals	\$2,563,600,904	\$24.7353	\$2,495,407,855	\$23.9847
	—4th Quarter 1917—		—1st Quarter 1918—	
	Total Cost in Dollars.	Cost per Capita.	Total Cost in Dollars.	Cost per Capita.
Breadstuffs	\$348,554,753	\$3.3372	\$351,952,618	\$3.3567
Vegetables	136,899,969	1.3107	143,179,060	1.3655
Sugar	210,439,897	2.0148	190,016,407	1.8122
Fruits	70,506,614	.6750	75,057,007	.7158
Oils and Nuts....	68,495,873	.6558	72,652,456	.6929
Fish	33,133,947	.3172	40,631,802	.3875
Meats	878,708,620	8.4131	838,387,663	7.9961
Poultry and Eggs.	266,500,892	2.5516	304,216,881	2.9014
Dairy Products...	611,510,693	6.1421	676,389,410	6.4510
Totals	\$2,654,751,258	\$25.4175	\$2,692,483,304	\$25.6791
	—2nd Quarter 1918—		Per cent	
	Total Cost in Dollars.	Cost per Capita.	increase or de- crease over 2nd Quarter 1917.	
Breadstuffs	\$349,626,283	\$3.3216	+ 9.3	
Vegetables	123,903,476	1.1768	—63.1	
Sugar	188,723,860	1.7930	— 7.4	
Fruits	103,881,429	.9868	+30.5	
Oils and Nuts....	81,964,541	.7786	+54.3	
Fish	24,732,401	.2349	— 6.9	
Meats	938,789,266	8.9192	+20.8	
Poultry and Eggs...	262,577,561	2.4947	+16.5	
Dairy Products	619,553,054	5.8863	+ 6.3	
Totals	\$2,693,751,871	\$25.5919	+ 3.5	

Subsistence Must Never Fail

EDITOR'S NOTE:—This article comes to us from the War Department, and was prepared from an interview with a Colonel in the Quartermaster's Corps, an officer familiar with food production, who had recently returned from an inspection of subsistence overseas.

HOW to supply our armies in France with the best food in America is one of the problems that has faced the Quartermaster Corps since the first expeditionary force went overseas. That this problem has already been met, and well met, is proved by the fact that there has been nothing seriously wrong with the food supply; that it shall be even better met is the firm determination of the officers of the Subsistence Division, Office of the Quartermaster General of the Army, whose chief has just returned from an inspection trip including the front-line trenches in France, where he made an exhaustive study of the food supply problem.

He returned especially impressed with the responsibility of every individual member of the Subsistence Division over here to the individual fighting man over there. And he brings out, in the most vivid way, the absolute dependence of our troops in France upon a steady, never-failing supply of the best quality of food from America.

"We must consider no precautionary measure too much trouble, no detail of organization too small, that helps to maintain this continuous flow of supplies or to assure its quality," he said on his return. "The food we are sending has a long road to travel. At one end of that road is our organization; at the other, the man on the battle-front. If for any reason the ration issued to him should turn out to be bad, it could not be immediately replaced—perhaps not for another twenty-four hours. It is our business to see to it that no food below standard quality in any way is ever allowed to reach the front.

"Office and administrative details, no matter how important, tend, through long repetition, to become a matter of mere routine, to be performed more or less perfunctorily. For this reason, I wish that every man in the division might have watched, as I have, the serving out of rations in the trenches and dug-outs. They would then realize, so vividly that they could never forget it, just how much a square meal means to these weary, ravenous, mud-caked boys; and no details that serve to ensure that square meal to their comrades over the sea could ever seem dull or perfunctory to them again."

The preparation of food for the men in France is not unlike the preparation of our armies. The Government has drafted a certain percentage of the country's food for our use in war, exactly as it has drafted a certain percentage of the country's manhood; and the food, like the material of our armies, must submit to a rigorous physical examination. It is passed upon by officers of the Inspection Branch of the Subsistence Division, just as the men, after they reach the training camp, are passed upon by the medical corps. And just as the army has availed itself of the services of civilian doctors and civilian draft-boards to make the first draft-examinations, thereby sparing itself, when the work is well done, a vast amount of preliminary labor and confusion, so, too, the Government hopes and believes that the food producers of the country will, from patriotic motives, become themselves volunteer preliminary inspectors, and select only the very best

of their products to be offered to the army.

As an illustration of the various processes and adventures through which any food product must pass before it reaches our armies in France, a can of beans has been selected, as representative and familiar. Our raw draft levies need training at a camp before they can go to France, and our beans must submit to a course of preparation in a cannery before they are fit to stand the trip. It is not likely that the dry beans, when they reach the packing house, will be of inferior quality, for all packers purchase choice hand-picked beans for canning purposes, and should the grower deliver an inferior article, he would be subject to the severe penalties of the United States Pure Food Law. But just as good soldier material can be spoiled by careless training, good beans can be spoiled by poor packing; and during the process of canning there are several dangers to be avoided, if a first-class food product is to be turned out.

Perhaps the greatest danger is that of insufficient processing. In order to make the beans absolutely sterile, they must be heated, after they are placed in the can, to a temperature of 240 degrees Fahrenheit for not less than one hour and a quarter. This processing effectively ends all danger from bacteria, if it is thoroughly done; but if not, a few bacteria survive, begin to germinate, and presently, by the production of gas, cause the can to swell and attain a condition in which the contents are totally unfit for food.

Let us assume, however, that this particular can of beans escapes these perils. In fact, if it did not, it would never be sent to France at all, for it would be caught by the system of army inspection, either at the cannery or later, at the embarkation depot, and thrown aside. It is now ready for packing into an export case for shipment.

It is probable that some packers have experienced moments of impatience over the number and rigidity of the specifications for the export cases in which canned vegetables for the use of the army abroad must be packed. It may have seemed to them a matter of small importance whether there were six or eight nails on each nailing edge, whether the ends were three-quarters of an inch or three-eighths of an inch thick, whether the nails used were of one size or another. But these specifications have been drawn after actual experiment with boxes of all kinds, and must be followed without the slightest deviation if the case is to reach France safely.

At the present time, nothing is more valuable to this country and its allies, nothing must be more carefully economized than tonnage space. Every case of food that is sent over poorly packed, so that it is broken in transit and its contents ruined, is just so much tonnage space absolutely thrown away. That is why the cases themselves must be inspected before shipment. Suppose the wire strapping used upon a certain type of export case was found to have been carelessly put on; but for this final inspection, it might have worked loose in rough weather, penetrated the box next it, punctured the cans and ruined an entire case.

On the arrival of the ship at its assigned French

port it either docks at once, to be unloaded directly, or is met by lighters, into which its cargo is lowered and then transported to the wharves. This unloading is a process of some peril to our can of beans and its twenty-three comrades in the same case, who are in for some rough treatment at the hands of the stevedores; all the more so since the scarcity of labor in France has led to the almost universal employment of Chinese and Hindu coolies or African and American negroes about the docks.

A brawny Singhalese giant in the hold of the vessel seizes the case and tosses it, along with twenty others of the same kind, into a sling, in which it is hoisted and swung over above the dock. But just at this moment something seizes the wandering attention of the laborer, who is supposed to be guiding its descent; a youthful naval aviator overhead, like as not, executing a nose-dive in sheer exuberance of spirits; the sling, left to its own devices, catches on a projection, and the contents are tipped out and slung with a crash upon the dock. This is the time to thank heaven for every *extra nail* required by army specifications; but these were never drawn to cover such a contingency as a thirty-foot fall, and the case collapses, sending the cans spinning in twenty-four different directions. Fortunately our particular can is not badly damaged; it receives a wound in the side that dents the tin, but is not severe enough to spring the solder.

The scattered cans are then collected and placed in what is known as "the hospital" on the docks. Here they receive attention from trained men in the Subsistence Division, who sort out those that are damaged beyond repair, and, after giving the rest such first-aid treatment as may be necessary, discharge them to be loaded on a car and shipped off to one of the great depots, somewhat closer to the front, where a three-months' supply of all varieties of food are stored. Here our can is again unloaded and placed in a warehouse, where, theoretically, it will remain just three months before undertaking the next stage of its journey.

This next stage takes it to the "regulating station," the most important point in the new distribution system which our army has taken over, with only slight modification, from the French, who have developed it, through the experience of three years of war, to a condition of surprising flexibility. All the food for one day for the entire American force in this vicinity is shipped to this regulating station, a sort of clearing-house for supplies, where it is divided, by the regulating officer, for shipment to the various divisions which constitute his territory. All supplies intended for the front are routed only as far as the "regulating station," for in order to maintain the necessary secrecy concerning the location of individual army units, no one behind this point is permitted to know exactly where a certain division is operating. It is the business of the regulating officer and his staff, to keep constantly informed of the shifting position of these units and the exact amount of their needs; and to make arrangements daily for re-routing the cars at this point and sending them on to the railheads, which are as close to the actual front as safety warrants.

Once the railhead is reached, the final stage of the journey to the front-line trenches begins. As the supply train draws up, you are to picture a vast collection of vehicles surrounding each railhead, ready to carry the food forward, automobile trucks or "camions" as the French call them; army wagons, drawn by horses;

sometimes even farmers' carts from some nearby village. And by these various carriers the food finally arrives at Division Headquarters, well within the firing zone, and now within easy access of the front itself. At headquarters the divisional supply officers are waiting to divide it between the regiments, then between the companies, and so expeditiously is this handled that only a short time elapses until it is in the hands of the company cooks.

It happens that the company into the hands of whose cook our can of beans has fallen is doing duty that day in the trenches, and it is consequently necessary to send their food forward to them—hot, if possible, some of it, at least, for it has been raining since early morning—a cold, thin, persistent drizzle that seeps through the thickest clothing, and raises the already high water-level in the sodden trenches just over the boot-tops.

And so our can of beans is picked up, and, without being opened, is thoroughly heated in the rolling kitchen of the company which is comfortably tucked away behind some scrubby bushes, eked out with skillful camouflage, in a convenient little declivity of the ground. The operation is carried on with great care. Smoke must be avoided. The cooks have learned a wholesome dislike for German shellfire.

In the meantime a detail of men is told to carry the hot food forward to the men in the trenches, for so close to the front this primitive method is the only one possible. There is, perhaps, a certain amount of good-natured grumbling among the men selected for this task, who look forward without enthusiasm to the long wet tramp through communication trenches carrying the heavy metal food-containers known as "marmite cans." None the less, they are soon on their way, stringing out into single file as they approach the slope that leads down into the entrance of the first trench. Then follows a weary, zig-zagging, stumbling journey through the confusing communication system, over the slippery duckboards, slimy with mud, a journey that seems as though it will never end, and that is made no more pleasant by an occasional German shell dropping uncomfortably near.

As they advance, the shell-fire increases, and when at last a sharp turn brings them, with disturbing abruptness into the front-line trench itself, with its lining of khaki figures, the crashes of artillery are so deafening and so continuous that the hungry men who swarm up out of the dug-outs and seize thankfully on the hot food seem to be dumb. However, there is no necessity for words. The smoking containers of hot coffee tell their own story, and besides, the men are too busy opening their cans of beans and ladeling out coffee to have time for conversation.

There are some, however, who have not been able to leave the dug-outs. The hot ration is carried down by a private to one of these—an officer with five-days' growth of beard somewhat obscuring his cheerful countenance, who sits, some twenty feet underground in constant attendance upon an exacting and never-resting telephone instrument, which, even as he attacks the hot food, sets up a querulous buzzing. After he has taken down the message and warmed himself with a long draught of coffee, he turns to the private:

"Lieutenant A. is at the other end of that confounded thing," pointing disrespectfully at the telephone, "in a God-forsaken listening-hole way out in No Man's Land. He's been there since last night. I know he's soaked through, and I'll bet he's half-froz-

en. I expect he'd appreciate a can of these hot beans about as much as——"

But that is quite enough for the private.

"Yes, sir, I know," he answers, and is half-way out of the dug-out as he speaks.

"I suppose," he adds a moment later, sticking his head into the door, "I suppose he could take care of a cup of coffee, too?"

The officer grins.

"He could," he answers. "But *you* couldn't; you'd never worm your way through that rabbit-hole without spilling it all over yourself. No, a hot can of beans will be plenty, he's got his cold emergency ration, you know."

And a few moments later the can of beans, whose progress we have been following from the factory, is on its way to No Man's Land.

The journey is neither easy nor pleasant, as the volunteer soon enough finds out, and he wishes, as, with infinite care he works his way forward through the damp, narrow tunnel, that he weighed nearer one hundred and fifty than one hundred and seventy-five. But at last, after creeping painfully round a corner, he sees light ahead of him—the listening post at last!

But it is a false alarm. When he reaches the opening he finds that at this point the original tunnel had struck an open trench, left there by one of those shifts which is constantly changing the position of the actual battle-front, and that for fifty yards or more his path is open to the sky. But this is far from an advantage, and he shows his realization of the fact by crouching low and covering the open ground before him with all the speed at his command. And he has need of all that he can muster, for suddenly a bullet raises a little puff of dust in front of him; and as, with a sigh of relief, he dives into the entrance of a second tunnel that opens before him like a haven of refuge, a perfect crackle of gunshots breaks out from the German trenches.

But the danger is over for the moment, and in five minutes more he is crouching with Lieutenant A. in a listening-post apparently designed for the use of an undersized child of three; and the lieutenant, while happily warming his stiff and frozen hands on the hot surface of our can of beans, very properly reprimands the volunteer for thus exposing himself to fire. But there is a grateful light in his eye, and the volunteer does not seem downcast.

Suddenly there is a sharp exclamation from the lieutenant. And, in answer to the volunteer's inquiring glance, he holds up the can, one end of which is slightly swelled. They both know what that means. They both have met with "swelled" cans of beans in their training-camp days, and know that there are few things on earth more utterly disgusting. Of course in camp it was a matter of small importance; the spoiled can was simply thrown away and a new one substituted. But now—when it was the only one to be had—. Well, there had been a blunder somewhere; some imperfection in manufacture, undue roughness in handling, carelessness in inspection—one or all of these factors had deprived the shivering lieutenant of the only hot food available.

The volunteer is disconsolate. He should have noticed it. He should have made his selection more carefully. And he will go back after a good can—it will only take him—.

"You'll do nothing of the sort," says the lieutenant shortly. "It wasn't *your* fault. All cans that reach

the trenches are supposed to be O. K. And you're not going back. Can't you hear the big guns tuning up? If I know anything about their habits, and I'll bet I do, they'll be at it twenty-four hours from now. And you'll stay here with me, out of harm's way, until they stop."

He philosophically unpacks his emergency ration of cold bread and meat, then gazes ruefully at the swollen can.

"It isn't badly swelled, after all," he continues to the volunteer. "And there's a dent in the side. It's just possible that the dent is responsible for the swollen end—that it's not spoiled after all. At any rate, I'll take a chance—."

With two sharp jabs of his knife he cuts a criss-cross in the end of the can, folds back the tin, and lifting it, takes a cautious sniff. Then he turns to the volunteer with an ecstatic grin:

"Never smelled anything so good in all my life! Nothing the matter with the O. M. C. this trip. Here! Pitch in! They're as hot as if they were just off the fire. I guess that's service!"

It is, at any rate, the sort of service toward which the officers of the Subsistence Division are striving. And what is true of this can of beans is equally true of every other food product that goes over to our army—and not only food, but every single article that they need up to those of such supreme importance as ordnance, ammunition and aeroplanes.

Carelessness on the part of any one of the many people through whose hands the produce passes on its way to the front may lead to disaster—in some cases great, in some small, but in no case negligible. That is why the united efforts of everyone in the country are necessary to support our army as it must be supported. For in days like these no man stands alone. He has become a part of a machine, and any blunder that he makes must be paid for, not by himself, but by one of our boys at the front, it may be with his life.

That is why there are to be no blunders.

New German Drying Process.

The so-called Krayeska method, a new means of drying eggs, fruit juice, and blood, has been demonstrated before the food authorities in Berlin and found worth exploiting to a large extent. The drying is done in a large iron cylinder 5 meters in diameter, in which a pair of big metal wings are quickly rotating, driven by a steam turbine. The fluid is lashed to foam and dried by the aid of a hot current of air that is continually passed through the cylinder. The dried product is in the form of a powder, which will keep for a long time and can be most economically transported. The dried products go through no chemical process and are directly soluble in water. Drying plants of this type for treating about 140,000 eggs a day will be erected shortly in Berlin and Bucharest.

Fruit Pits and Nut Shells Collected.

Twelve hundred federal, state, municipal and private institutions, including hospitals with a total population estimated at 1,230,000, have been circularized by the Food Administration and urged to join in the campaign to save fruit pits and nut shells which are being collected by the Red Cross throughout the country and used to make gas-mask charcoal for the protection of American soldiers against German gas attacks. Among them are dining-rooms of educational institutions with an estimated enrollment of 449,537.

Food Prospects

BY CHARLES RYAN,
of the U. S. Food Administration.

THIS country is not on rations. So long as our people stand firmly behind their Government and show themselves willing to observe its request for retrenchment and conservation, autocratic food control will be unknown.

But we are now facing an imperative demand for a more rigid food program than we have yet known. We must increase by at least 50 per cent our exportation of food to the European Allies. This can be done only if our people, standing united in their willingness to share with those across the sea, definitely cut down consumption. The time has passed when we can save a few staple commodities—by using palatable, convenient substitutes. We must save all foods. We must recognize that this country is Europe's pantry and that our success in filling the Allied larders will be, to a great extent, the measure of their and our success in meeting the German arms.

We need even greater simplicity of living than last year amongst all that section of the community to whom foodstuffs are a secondary item in expenditures.

The willingness to assume individual responsibility in this matter by the vast majority is one of the greatest proofs of the character and idealism of our people. Our simple formula for this year is to further reduce consumption and waste of all food. We have so arranged the International Food Program that, except for a moderate substitution of other cereals in bread, it will not, we hope, be necessary to substitute one foodstuff for another, nor to resort to wheatless and meatless days. What we need is to reduce directly our consumption of *all* foodstuffs, laying especial emphasis on the staples. The Allies are in need of all the surplus of the great staples that we can provide.

We estimate that nearly 9,000,000 people eat at our public eating places—hotels, restaurants, boarding houses, clubs, dining cars, and so forth. The food consumption in these places is larger than in the average homes. We are asking the proprietors and employes of these institutions to undertake in many particulars a more strict program than last year, and we are confident that they will willingly do this.

This is not rationing—a thing we will never have if our people continue to support the Government as in the past. We are simply making an appeal to the intelligence in the homes and public eating places of America to work out for themselves the means and manner of saving.

To provide ships for our army, we have not only to build all that we can but we must have the help of Allied shipping. In order that the Allies may provide this, they must take food ships from the more distant markets and place them upon the shorter run to the United States. We must decrease our imports of sugar, coffee and tropical fruits.

Under these conditions, the demand upon us is for larger supplies. The conferences of food supply and shipping held in Europe enable us to estimate our burden. Compared with previous years, the Allied civilians and armies, our own armies, the Belgian Relief and certain neutrals who are dependent on us require the following round amounts from us:

	Average Three- year Pre-war Shipments Tons.	Shipped Year ending July 1, 1918 Tons.	Must ship Year ending July 1, 1919 Tons.	Increase this year over Last year Tons.
Meats and Fats (Beef, Pork, Dairy, Poultry and Vegetable Oil Products)	645,000	1,550,000	2,600,000	1,050,000
Bread Stuffs (Wheat and substitutes in terms of grain)	3,320,000	6,800,000	10,400,000	3,600,000
Sugar (From United States and West Indies)	618,000	1,520,000	1,850,000	330,000
Feed Grains (Mostly Army Oats)	950,000	1,950,000	2,700,000	750,000
Totals	5,333,000	11,820,000	17,550,000	5,730,000

Even this program means further self denial by the Allies next year. They are making this sacrifice in the common cause. We must maintain the health and strength of every human being among them or they will be unable to put their full strength alongside our own in the supreme effort.

"At the President's direction," Mr. Hoover recently stated, "I have assured them 'in this common cause we eat at a common table,' and upon entering these conferences in Europe we promised them that whatever their war-food program called for from us, we should fulfill."

If we survey our ability to meet this definite promise to them we find that while our wheat production this year is better than last year, our production of other cereals is less.

We have had severe losses through drought in many sections.

On balance, our resources are no greater than last year. We find, however, that we can give this increase in food supplies of 5,730,000 tons over last year, and still have a margin over the amount necessary to maintain our own health and strength.

At best the Allied table will be less than ours, for the Allied peoples are denying themselves more in order to transport our soldiers. We can do no less than fill the ships they send us.

Of our imports, we shall apparently have sufficient sugar to maintain the present consumption and take care of the extra drain of the Allies from our markets instead of compelling them to send their ships to the Far East.

Of our own products we must secure a reduction in consumption and waste in the two great groups of, first, breadstuffs, and, second, meats and fats; that is, in all bread and cereals, beef, pork, poultry, dairy and vegetable-oil products. The average consumption of our people of breadstuffs amounts to about six pounds per week and of meats and fats to four pounds a week for each person.

A reduction in consumption of less than one-half pound per week per person in each of these two great groups of foods would accomplish our purpose. The Food Administration emphasizes, however, that it does not want curtailment in the use of milk for children.

It is necessary that every family in the United States study its food budget and food ways to see if it cannot *buy less, serve less, return nothing to the kitchen and practice the gospel of the clean plate.*

The Necessity of Dairying During the War

By PROFESSOR OSCAR ERF,
Ohio State University.

THERE is undoubtedly no food as essential to the development of mankind as milk. First, it is the only food which man can take from infancy and produce growth to maturity. Second, milk if taken in liberal quantities is the greatest disease resisting food found in the entire category of foods; and third, it is one of the most economical of all foods. Without the complete and perfect nutrition furnished by milk and its products, soldiers would be greatly hampered in carrying on warfare. The old adage that biscuits are as essential as bullets in time of war, may be applied to the use of dairy products for it seems they are almost as essential as munitions and in times of peace they are absolutely necessary to maintain a high standard in the realm of civilization.

Increased crop production which is now of so much importance depends to a very great extent upon the dairy business. The dairy cow not only supplies food direct, such as milk and its products, but she furnishes a large amount of beef and is indirectly responsible for pork derived from skim-milk and for increased crops of wheat, corn, oats and hay brought about indirectly by the use of manure from the cow.

It has therefore been our conscientious aim, and every effort has been exerted, to develop the dairy business, and while there have been a great many obstacles to hinder the progress of this splendid industry, probably the greatest one has been the increase in price of all commodities entering into the cost of milk production without a proportional increase in the price paid for milk. This has had a tendency to make the dairy business unprofitable in recent years, and rather than to have the business decline it has been deemed necessary to bring this matter to the attention of both the producer and the consumer. The wealth of a nation depends upon the quantity and quality of the food which it has in store and not upon the amount of money, directly speaking, for money is merely a medium of exchange. Therefore, one of the greatest factors in winning the war is an abundance of food, and the best way to provide this is to pay at least the cost of production plus a small profit. At the present time the average dairyman is probably satisfied when he receives the cost of production.

The fact that the production of milk is necessary for the proper development and growth of mankind is sufficient reason for exerting every effort to develop the dairy industry in spite of the obstacles which arise and which are most difficult to overcome. There have been cow testing associations in Ohio for the past nine years, and for ten years figures have been kept on the cost of milk production. These figures have always been high in comparison with those repeatedly published, and for that reason we have hesitated about giving them out, for fear they would be considered overestimated and so do more harm than good. But constant dissatisfaction on the part of milk producers caused us to search for a remedy for the situation. They were urged to keep better cows, but gradually the various items that enter into the cost of milk production advanced so much that finally even the best cows proved to be quite unprofitable for milk production, in the average herd. The only way by which the dairyman could figure a profit was to place an inflated value upon the manure and increased values upon the breeding operations.

We realized that there should be no decrease in production, especially after the beginning of the war, and that some method had to be devised by which the business could be placed on a sound financial basis, which would mean that from 70 to 80 per cent of the producers must find the business profitable. The price of milk seemed to be so firmly established that any effort to raise it would have spelled failure to that particular dealer. A few producers, figuring that the cost of distribution was too high, began distributing their milk direct and at a lower price than the average dis-

tributor. This tended to lower the average price paid the producer, for competitive distributors would lower the price paid. Consequently the fact that a few producers did not understand the economical laws of business resulted in a decreased price paid for milk to their fellow producers.

During this time the consumption of milk was apparently decreasing; the margin of profit to the distributor was so small and the producer was suffering constant losses, so that there was no chance to advertise dairy products and inform the public of their value. Other food products were heavily advertised and in spite of the fact that the price of butter was low, oleomargarine was making terrific inroads in the butter business. The only thing to be done was to raise the price of milk to such an extent that dairy products could be advertised and the public informed of their value and their necessity in the daily diet. This, however, could not be accomplished by individuals. In Ohio an attempt was made to organize the distributors with the hope of preventing disastrous competition, arriving at uniform methods of payment and finally protecting their own business by protecting the producer. This, however, to a slight extent, was a transgression of the anti-trust laws, so that very little was accomplished. The buttermakers likewise were organized, but little could be done. Then an attempt was made to organize the producers that were supplying particular markets into larger groups. Already there were small local organizations in various parts of the state and the work of organizing was taken up with considerable enthusiasm. This soon resulted in certain demands to the distributors, who, for the first time, felt that they were being dictated to and in some cases opposed the organization. But the distributor and manufacturer who could look into the future realized that if there was no increase in the price of milk his business would be virtually ruined in a short time, and in order to make it a success there must be a small margin of profit both for the producer and the distributor with enough additional profit to permit advertising the product and stimulating consumption. The advertising done during the past year by local and national organizations and by the Government has resulted in increased consumption and a good increase in price. The old motto, "Do business on good margins and let the people know that your business is good" is still sound, and people in these times should be educated to the use of more wholesome and economical foods among which dairy products have an important place. With this point in view conscientious effort has been made to increase the price of dairy products to a point where the business will be profitable to at least 75 to 80 per cent of the dairymen.

There are some conditions under which the business can never be made profitable and the public should not be expected to pay a price which will justify a profit in every dairy. It is a well recognized economical law that the price of milk should be regulated by the degree of consumption. When there is a shortage of milk the price should advance to the point which will meet the cost of production in even the most poorly managed dairies; while in the time of surplus the price would be so low that only the best of dairies would be receiving cost of production. This means that throughout the year an average of approximately 78 per cent of the dairymen would be receiving production cost.

What constitutes the cost of production has been a matter of broad discussion and so few producers have been in the habit of keeping a cost account that it has been difficult to procure accurate figures. In fact some accountants have made the statement that there is no way of arriving at figures on the cost of milk production since it is so intimately interlinked with other farm operations. Some estimates must be made in every business operation and personally I believe that absolutely accurate figures on the cost of milk production are not essential. Mr. James, an expert account-

ant of the Ohio Institute of Public Efficiency, has made the statement that he always doubts the accuracy of accounts in a complex business that are claimed to be absolutely accurate. An average variation of 10 cents per hundred or even more should not be considered too great, as normal individual conditions vary to as great an extent as 50 per cent of the cost. Some men are fortunately located, for instance, so that the cost of production is low, while on the other hand there are those who are located to a disadvantage and the cost of production will naturally be much higher. Conditions vary with the seasons and with the year. Drouths sometimes make a usually profitable dairy unprofitable. Contagious abortion and other diseases will make the best of dairies extremely unprofitable.

Dairymen must be educated regarding labor values and the methods of estimating costs. A comparison of two men's ideas of the value of labor will give a clear conception of this point. In what was considered an extremely successful dairy center by reason of the fact that the dairies were large, the barns well built and spacious, the homes beautiful and the farms in a high state of fertility, there was a small organization of dairymen. Mr. Knabenshue, the president of the association and the most progressive dairyman, was the leader of a discussion on the cost of production. After taking the association figures as to the quantity of feed fed and the amount of milk produced and adding to this the overhead, it was found that they were producing 100 pounds of 3.5 per cent milk at a cost of \$2.72 and were selling it for \$2.10. It was suggested that these figures conflicted with their claim that they were producing milk at a profit. Mr. Knabenshue explained it as follows: "We folks live out here on these farms and the best way to amuse ourselves is to work. We have formed the habit of getting up at half-past four in the morning, and as it is useless to go to the fields before seven, we utilize the early morning hours for productive work, instead of wasting them as most city people do. The same is true in the evening. We exercise in this way rather than to waste our energies in running after a golf ball. For this reason we figure this as clear gain and do not figure our labor at the regular price. Furthermore, this kind of work makes men and women of our boys and girls and teaches them to be industrious, frugal and economical. A good frugal man in the country can oftentimes accumulate money enough to buy a farm, when receiving one dollar per day, while many city men go broke on \$10 per day. It is just a question of management. Furthermore, we feel that we are doing as much to help win the war by producing food in this manner as though we were buying large numbers of Liberty bonds." Contrast his statement with that of a man in the plumbing business—Mr. White, who is the leader of an organization of plumbers. Mr. White informs us that no man ought to work longer than eight hours per day; that he should have at least six hours for recreation, in order to make life worth while. Seventy cents per hour is a very reasonable wage and is necessary in order to keep a man's family in just comfortable circumstances.

There is a happy medium between these two extremes and to find this average is an important problem. Today, education is the biggest problem that is confronting the dairy leader and this process of education must begin by first organizing the producers and teaching them the simple farm departmental methods of cost accounting. After they are thoroughly organized a man should be employed whose business it is to start cost accounts and whose salary should be paid from the proceeds of the business, as the expenses are paid in the bookkeeping department of a bank or corporation. This man visits the farms of the dairymen in the organization quarterly and figures up the cost of production for the four periods of the year. These figures should determine the price to be received for milk quarterly.

Until this condition has come about milk commissions and tribunals can only arbitrate by causing parties who differ to agree regardless as to what is just. The keen observer along dairy lines has always found the dairy business on the decline during the time of high prices; while the greatest development has been made during times of depression.

Upon analyzing this situation it becomes very clear that in order to maintain the profitability of the dairy business the price must increase directly to the advance in price of everything that enters into the production of milk. Since every item increases, the increase in the cost of the final product is proportionately much higher than the increase in cost of the elementary commodities that enter into it. The opposite is true in case of a decrease in price of these commodities and the production of a product is always more profitable than the production of the particular commodities that enter into this product.

Undoubtedly sooner or later—it may be through regulations and it may be at the end of the war—these commodities will gradually be lowered in price and then the dairy business will automatically become a profitable business. But dairy farmers have large investments in their dairy plants and if they are forced to sell during the crisis which we are now facing, it will be done at a sacrifice and these dairymen will very reluctantly enter into the business when prices are low again.

To help carry the producer over this crisis, therefore, becomes the particular problem in which every man and woman should be interested. If the preservation of the dairies is neglected now, the consumer must pay the penalty later on by paying proportionately increased prices for milk, during the time of a decline in prices of other commodities, in order to compensate for the losses sustained.

Kosher Margarine Manufacture in Hull.

Arrangements have been completed for the manufacture of Kosher margarine in Hull. The margarine will be made exclusively of vegetable products and milk, the animal fats in standard margarine being omitted. The milk will be tested and sealed by a rabbi or his nominee, who will also supervise the process of manufacture. The local food committee will issue special licenses to retailers. It is also proposed to manufacture Kosher vegetable oil.

The manufacture of standard margarine in the United Kingdom is reported to have now reached the point where the country may be said to be self-supporting and not to require imports from abroad. It was announced that by the end of September the fat ration would be increased from 5 to 6 ounces weekly per capita (margarine 4 ounces and butter 2 ounces), which represents about 75 per cent of the consumption in normal times. Recently the quantity of animal fats permitted to be used in the production of margarine was increased to 20 per cent of the whole, which satisfactorily increases the food value.

State Institutions Use Oleo.

The State of California will make a three months' trial of the use of oleomargarine as a substitute for butter in its various institutions. There is about 80,000 pounds of butter used quarterly in the different California institutions, ranging from 30 cents to 60 cents a pound, and oleomargarine will cost about half the price of butter.

Professor M. E. Jaffa, the State's diet expert, says that it is almost equal to butter in nutrition, and is in no way an inferior from a health standpoint. About \$100,000 a year will be saved by the State in the difference in price of this substitute and butter.

Erratum.

The line usually occupied by the phrase "Rye Flour" in our price chart was by error printed "Rice Flour" in our September issue and the price of 7½¢ per pound as given to rice flour should have applied to rye flour.

RETAIL PRICES,

Average Price Per Pound	Average Price Per 100 Calories		Lima, Ohio (Typical Small Town)	Augusta, Me.	Boston, Mass.	Buffalo, N. Y.	Trenton, N. J.	Philadelphia, Pa.	Pittsburgh, Pa.	Providence, R. I.	Washington, D. C.	Cincinnati, Ohio	Cleveland, Ohio	Indianapolis, Ind.
CEREAL PRODUCTS														
6.4	.40	Wheat Flour, War Std., 49-lb. bag.....	315	330	314	314	340	340	310	320	330	320	325	325
7.2	.45	Rye Flour, Std., 24½-lb. bag.....	200	200	184	172	220	190	165	170	175	165	190	143
7.2	.44	Graham Flour, 10-lb. bag.....	60	80	75	65	90	90	70	70	.....	70	45	65
11.7	.72	Corn Starch, lb.	13	12	12	10	12	12	9	12	11	12	12	10
8.1	.50	Corn Flour, 5-lb. bag.....	35	50	35	33	40	50	40	35	35	30	.....	38
6.8	.42	Corn Meal, lb.	6	7	7½	7	8	7	7	7	6	6	8	6½
7.5	.45	Barley Flour, lb.	8	8	6	6½	7	10	10	7	.....	6	8	7½
9.3	.51	Oatmeal, lb.	12	.....	8	8	8	10	9	7	8	7	8	9
8.4	.47	Oats, Rolled, bulk, lb.....	10	9	7½	8	8	8	8	.....	8	7	8	8½
13.4	.82	Rice Flour, lb.	15	16	12	14	15	15	14	.....	12	12	15	14
11.2	.71	Buckwheat Flour, lb. ....	.....	12	.....	9	10	10	.....	10	15	7	10	12
10.0	.62	Hominy Grits, lb.	12	10	7	10	8	10	11	10	13	15	15	8
10.7	.59	Quaker Oats, 20 oz.....	13	15	11	14	11	13	11	12	.....	12	15	14
14.3	.90	Rice, fancy head, lb.	15	15	15	14	14	16	13	12	.....	14	15	15
13.2	.81	Barley, Pearled, lb.	15	18	10	15	8	14	9	8	10	10	10	10
10.1	.86	Bread, lb.	10	10	8	10	9	10	10	10	9	10	10	10
21.7	1.14	Crackers, Graham, lb.	22	15	20	25	26	25	24	.....	19	20	22	22
21.6	1.12	Crackers, Oatmeal, lb.	22	.....	22	25	26	22	24	.....	19	20	22	.....
15.0	.92	Macaroni, lb.	15	20	17	18	14	18	12	14	18	15	15	20
SUGAR AND SIRUP														
10.4	.57	Granulated Sugar, lb.	11	11	10½	9½	10½	10½	9	10	10	9½	10	11
8.6	.59	Corn Sirup, 10-lb. pail.....	90	75	.....	90	85	90	.....	14	72	75	85	85
33.7	2.27	Comb Honey, lb.	30	35	45	38	30	40	25	.....	.....	35	35	30
MISCELLANEOUS														
33.7	1.50	Cocoa, bulk, lb.	30	.....	25	25	30	30	25	.....	36	30	30	28
39.2	6.53	Eggs, fresh gathered, firsts, doz.....	53	65	65	70	85	65	60	70	63	54	60	55
6.6	2.13	Milk, qt.	12	13	15¾	14	14	13	15	15	15	14	14	12
37.7	1.81	Cheese, American Cheddar, lb.....	37	35	32½	34	38	35	33	35	38	35	35	38
FATS														
57.7	2.43	Bacon, Sliced, lb.	60	55½	58	60	60	60	48	52½	55	55	50	60
65.2	1.87	Creamery Butter, fancy, lb.	67	65	63	65	65	70	65	54	67	68	64	65
33.7	.82	Pure Leaf Lard, lb.	35	40	30	35	33	33	33	34	35	32	32	35
36.8	1.08	Oleomargarine, Uncolored, lb.	38	32½	37	38	35	38	32	36	38	38	35	38
35.8	1.02	Nut Margarine, Uncolored, lb.....	37	35	35	33	35	34	32	33	36	37	32	38
11.0	2.76	Italian Spanish Olive Oil, qt. tin.....	250	200	200	160	280	250	200	175	220	225	150	350
34.7	.87	Cottonseed Oil, qt. tin.....	.....	.....	45	.....	83	75	90	65	.....	75	.....	.....
37.6	.94	Corn Oil, qt. tin.....	75	75	70	65	75	75	80	.....	.....	75	75	65
38.9	.97	Peanut Oil, qt. tin.....	75	.....	.....	.....	100	75	85	.....	.....	.....	.....	.....
29.6	1.08	Peanut Butter, lb.	30	35	24	27	24	35	25	27	23	30	26	30
FRUITS														
20.8	1.57	Evaporated Apples, lb.	25	.....	23	21	25	25	.....	25	.....	20	.....	15
18.9	1.58	Evaporated Peaches, lb.	18	25	25	16	18	20	15	18	20	18	18	20
15.9	7.57	Canned Peaches, No. 2½, Std., 29 oz....	25	28	45	25	30	35	25	30	35	25	30	30
17.5	2.50	Canned Pineapples, No. 2½, Std., 30 oz....	35	35	37	30	38	40	27	32	35	35	35	30
15.6	1.00	Raisins, Seeded, pkg., 15 oz.....	15	15	15	15	15	15	14	15	15	15	12	15
18.1	1.56	Prunes, Medium Size, lb.....	18	16½	21	18	20	20	16	18	20	18	13	20
VEGETABLES														
3.6	1.20	White Potatoes, lb.	4	3½	3½	3¼	3½	4	4	3½	3¼	4	3½	5
7.1	1.58	Sweet Potatoes, lb.	8	6¼	5	7½	6	5	9	5	.....	6	8	7½
4.5	2.25	Onions, lb.	5	6	3½	4	3½	3	6	4½	4	4	4	5
15.6	.99	Navy Beans, dry, lb.....	17	17	16	15	14	16	16	15	15	15	15	17
15.7	17.44	String Beans, Cnd., No. 2, Std., 19 oz....	20	18	28	20	16	22	20	15	15	20	15	18
14.6	3.32	Corn, Cnd., No. 2, Std., 20 oz.....	12½	22	25	18	18	20	18	20	20	15	20	15
15.3	6.12	Peas, Cnd., No. 2, Std., 20 oz.....	18	20	30	18	18	20	18	18	20	20	20	17
14.8	.92	Split Peas, lb.	15	15	13	15	14	18	13	12	15	12	15	20
25.1	1.35	Peanuts, Unshelled, lb.	25	26	25	40	22	24	22	20	25	20	.....	.....
10.4	10.40	Tomatoes, Cnd., No. 2, Std., 33 oz.....	20	22	28	23	23	22	20	22	20	22	25	25
4.3	3.58	Cabbage, lb.	7	3	2½	4	4	.....	8	2	3	4	4	5
4.2	2.46	Beets, lb.	5	3	3½	4	3	.....	7	3	5	3	5	5
4.5	2.50	Turnips, lb.	5	3	3½	4	4	.....	6	5	7	4	10	7
MEATS AND FISH														
37.8	5.81	Beef, Round Steak, lb.....	40	55	52	40	48	50	40	51½	45	33	32	38
43.1	8.62	Veal Cutlets, lb.	45	35	75	38	55	45	48	57½	60	35	45	60
35.3	4.06	Leg of Mutton, lb.....	35	.....	32	.....	.....	40	48	30	.....	25	.....	.....
39.3	4.68	Leg of Lamb, lb.	45	40	38	38	40	45	48	33½	40	35	35	50
46.2	3.76	Pork Chops, lb.	45	50	45	48	50	50	50	50	50	45	50	50
54.4	2.86	Ham, Sliced, Med. Fat, lb.....	60	50	55	.....	50	60	50	60	50	60	45	60
43.1	14.83	Chickens, Broilers, lb.	50	50	57½	45	52	50	50	.....	50	38	38	35
27.6	7.94	Salt Cod, lb.	25	20	28	24	25	32	25	.....	30	20	.....	30
27.3	27.3	Salt Mackerel, lb.	25	.....	25	32	28	30	28	.....	.....	25	35	.....
32.3	7.17	Halibut, lb.	35	42	35	35	45	40	32	38	35	30	30	30
32.4	5.04	Salmon, lb.	35	48	30	32	45	50	35	38	35	25	39	30
30.4	4.62	Salmon, Cnd., No. 1, tall, 1 lb.....	30	30	30	30	28	32	28	27	30	30	35	38
29.4	7.95	Trout, lb.	38	28	28	25	26	25	30	30
26.2	8.19	Whitefish, lb.	25	20	28	26	25	25	30

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	Richmond, Va.	Montgomery, Ala.	New Orleans, La.	Little Rock, Ark.	Chicago, Ill.	Detroit, Mich.	Madison, Wis.	Des Moines, Iowa	St. Paul, Minn.	Fargo, N.D.	Lincoln, Neb.	Topeka, Kan.	Denver, Colo.	Tucson, Ariz.	Phoenix, Ariz.	Reno, Nev.	Boise, Idaho	Portland, Ore.	Los Angeles, Calif.	San Fran- cisco, Calif.
25	320	330	343	310	300	310	300	390	315	300	310	295	285	330	302	310	285	300	305	315
00	185	.....	170	165	155	150	147	170	150	.....	200	.....	145	195	175	225	175	170	161	175
90	.....	85	80	65	68	65	65	70	65	65	60	75	75	70	.....	73	75	65	61	72
15	12	13	10	10	10	10	12	10	12	12½	11	11½	15	10	10	15	12½	12½	11	11
45	37½	37½	40	32	35	30	40	35	35	40	70	35	35	40	40	45	80	42	37	40
6	6	5½	7	6	6	6	8	6	7	8	6	6	6½	7	7	8	7½	7½	6¾	7
10	7	9	8	7	6½	5	8	6	6	8	7½	6½	6½	7½	7	9	8	8½	7¾	7
10	13	.....	8	10	10	6	7⅓	7½	9	8	.....	8	8	5	11	13	8½	8½	9½	10
12	.....	.....	8	10	8	6	7	7½	9	8	.....	8	8	.....	11	11	8½	9	8⅓	9
12½	12½	.....	11	18	12	10	13	15	12½	12¼	12½	12½	12	15	15	13	12	12½	11	11
12½	.....	.....	12½	15	10	8	.....	10	.....	10	12	10	20	6	.....	15	11	.....	12½	10
12	8	7	7	7	7	10	7	12	10	.....	8	7	15	12½	13½	9	.....	8½	7¾	9½
15	13	13	12½	12	12	13	13	15	12½	12½	14	15	15	16	15	15	15	15	12½	10
15	13½	13	12½	15	13	12	14	15	15	15	15	12½	15	17½	15	13	15	15	15	15
10	15	20	10	17	12	8	15	10	10	15	9	10	20	25	20	14	20	12½	10	12½
10	10	12	10	10	10	8	10	10	9	15	9	.....	8	10	11	10	12½	10	12	10
25	25	17	20	17	22	20	22	20	25	25	19	20	20	15	.....	20	25	18	20	22
25	20	17	20	17	22	20	22	20	25	.....	19	20	20	15	.....	20	25	18	20	22
15	15	15	12	13	15	8	20	12½	12½	25	12	15	10	20	.....	14	10	12½	11	11
9½	9	10	10½	11	9	9½	11	9½	11	12	11	12	11	9½	11½	11	11½	10½	11	10½
85	85	.....	95	70	75	85	85	85	85	100	90	85	95	100	100	93	100	95	96	90
25	35	.....	35	25	35	36	.....	40	40	.....	35	40	30	.....	.....	25	30	40	36	25
50	.....	.....	40	38	25	40	.....	.....	25	40	22	30	30	.....	.....	50	60	40	24	40
55	53	.....	55	50	57	51	50	48	52	48	44	46	60	70	60	73	55	60	65	68
16	16	.....	15	16	14	15	12	15	11	13	12	13	11	15	15	15	15	16	14	13
40	37	38	38	38	38	38	34	35	40	40	37	40	40	37½	40	40	40	35	40	50
60	53	55	55	55	60	52½	60	60	55	55	44	57½	60	65	70	65	60	60	65	60
60	60	69	63	65	65	64	68	65	63	60	64	66	60	70	70	73	69	65	65	67½
35	34	35	32	33	33	33	33	33	35	33	34	35	33	38	37	30	30	33	33	30
35	35	36	37	32	37	35	38	32½	35	35	37	38	38	.....	37	42	40	40	38	38
35	35	35	35	38	35	35	34	35	35	35	36	35	40	.....	.....	.....	45	40	35	38
00	200	.....	175	125	180	200	185	250	.....	225	300	165	275	190	.....	195	150	.....	215	.....
85	75	92	70	38	70	75	.....	75	75	.....	.....	10	75	.....	.....	50	75	68	46	40
80	75	.....	70	40	70	68	75	75	75	80	75	75	75	85	.....	83	75	75	65	65
.....	.....	.....	70	40	75	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
40	30	30	30	25	25	25	23	25	25	35	22	30	30	20	.....	30	40	25	28	30
.....	17	20	20	18	25	20	.....	.....	.....	.....	.....	.....	25	20	.....	20	18	16	20	20
.....	15	20	18	18	18	20	25	.....	20	18	16	18	25	20	22½	14	15	15	16	16
30	20	30	25	25	30	25	30	25	25	.....	26	35	30	40	25	30	30	25	20	29
35	25	30	25	40	30	25	35	30	30	.....	29	35	40	35	30	35	27½	25	28	39
18	15	18	13	14	15	12	15	15	15	15	12	17	15	15	.....	14	16¼	12½	12	12½
18	13½	18	15	18	18	12	18	15	18	18	14	17	20	25	20	20	16¼	15	16	12½
5	4½	5	4	3½	3¼	3	3	3	2¾	2½	3½	2¾	2½	.....	4½	3	2¼	2¾	3½	4½
7	6¼	3¾	5	6	8	5	8	8⅓	9	12½	7½	4	10	8	7	8	8½	5	.....	6
8	6	6	5	5	4	3	5	5	3	5	3½	5	3½	4	4¾	3	4	3	3⅓	4
.....	17½	20	16	15	17	15	14	15	12½	15	14	16	20	17½	17	17	15	13	15	16
20	20	18	20	18	20	12	15	15	15	19	17	20	20	15	20	18	22½	16	12½	12½
20	17	18	20	20	20	17	20½	15	18	20	14	16¼	20	15	15	15	25	20	14	12½
20	17	18	18	17	20	14	20½	17	18	20	15	20	20	17½	20	20	30	15	19	12½
20	15	18	15	6	15	15	15	.....	10	20	15	.....	25	15	.....	14	11¾	12½	12	12½
.....	.....	.....	.....	15	25	15	25	25	25	25	.....	.....	35	.....	.....	30	35	25	23	.....
20	20	.....	20	18	23	25	20½	25	18	10	19	22	25	25	20	15	25	18	15	.....
6	5	5	2	4	3	3	2	5	2	4	4	5	2½	8	6	4	4	5	4½	.....
4	.....	.....	5	5	3	4	3	4	2½	3	5½	3⅓	2½	5	.....	3	3	7½	.....	.....
4	.....	5	5	5	3	5	3	4	2	3	3½	3⅓	2½	5	.....	3	3	7½	.....	.....
35	40	35	33	35	38	38	35	42	35	30	34	37½	35	35	35	32	30	28	30	28
40	45	40	40	40	35	40	38	40	40	32½	.....	45	40	45	37½	40	35	30	45	25
35	35	45	37	40	28	32	35	40	33	32½	32	40	35	40	42½	28	35	35	.....	28
40	35	45	40	40	40	38	38	42	35	42½	35	40	35	.....	.....	35	40	35	35	35
45	50	50	50	45	45	46	42	45	45	42½	43	45	45	45	45	50	40	48	42½	40
50	45	50	50	50	55	50	45	60	55	45	60	60	60	55	60	60	60	60	55	60
40	50	50	40	45	35	42	25	40	35	32½	29	40	35	45	35	50	40	45	40	60
.....	.....	.....	27	40	30	18	30	25	35	30	16	30	30	40	30	30	.....	22½	24	.....
25	25	30	25	40	25	22	28	25	24	35	25	30	20	25	.....	.....	.....	.....	22	.....
.....	.....	.....	.....	40	30	35	30	30	30	30	.....	30	35	.....	25	30	30	25	17½	30
.....	.....	.....	20	40	30	35	30	30	30	35	.....	30	35	.....	30	30	30	25	28	22½
30	30	35	20	35	30	30	32½	30	30	30	28	35	.....	22½	30	29	30	35	.....	30
18	20	.....	22	45	28	25	30	35	22	.....	.....	.....	35	.....	.....	.....	.....	30	.....	.....
.....	.....	.....	20	35	26	25	28	25	22	.....	.....	.....	35	.....	.....	.....	.....	.....	.....	25

How Uncle Sam Feeds His Men at Sea

TWO hundred and ten thousand meals were served on a United States transport on a recent voyage. One hundred and eighty varieties of food were used in making up the menus, and this ship carried 750,000 pounds—3,750 tons—of food.

An account of how the soldiers are fed is given in the ship's daily newspaper. The vessel has its own journal, printed aboard, containing the news of the day received by wireless through the "Navy Press," which keeps the men on the seas in touch with the events of the outside world. The ship's reporter, describing how "the almost unending lines of khaki file by for their meals," says:

"In spaces no larger than a private dining room at Sherry's they come by, thousands upon thousands, and yet in such perfect order that in less than 80 minutes the last man has been served.

"The khaki line seems limitless. It must seem longer than that to those in the rear. But the coffee in the big pots remains hot, the stew continues to steam, and in less than seven seconds each man has an equipment replete with food. It only takes two details to accomplish this miracle—perfect system and vast quantities of things that one can eat. That's about all it takes.

"Flour, potatoes and beef are the Big Three that rule the realm below, yet there are 159,000 pounds of fresh vegetables waiting to be absorbed, providing the sea doesn't get too rough.

"After receiving their food the men arrange their own menus. For example, one takes gravy on his rice and jam on his bread. The next takes gravy on his bread and jam on his rice, using the combination to produce a crimson-tinted mixture of startling effect. American ingenuity is hard to stop.

"Outside of providing 210,000 meals at sea, the mess officer of the ship has very little to do. Very little.

"He is only called upon to provide, by the regulations, 180 different varieties of food. That's all. Ever try to order 180 different things to eat? Yet this is the authentic list.

"The food needed to feed several thousand men at

sea ranges beyond the glutton's dream. You get the answer in the ship down below the water line where 7,290 loaves of bread have been baked in one day, and eaten, and where you stumble over every variety from 60,000 pounds of beef to 132,000 eggs, or a compartment of brick ice cream in a 10 degree above zero vault.

"And if this doesn't suit you, you can bump along into 49,324 pounds of potatoes, 7,100 pounds of ham and bacon, 7,800 pounds of butter, 9,200 pounds of sugar, and 61,500 pounds of flour.

"If you can't get a meal out of this you can still fall back on 4,600 pounds of sausage, 3,400 pounds of sauerkraut, 26,000 pounds of apples, 19,800 pounds of oranges and 4,200 pounds of onions.

"And this leaves out 1,600 pounds of jam and 9,400 pounds of lima and navy beans.

"The sea brings on an appetite—at times. So does wearing khaki. The combination develops a cyclone. Yet this ship not only yields many thousands of meals a day, but will deposit 100,000 pounds of food at its next port. No wonder Mr. Hoover wanted all food conserved. He must have thought of these men in khaki waiting their turn, one thousand upon another thousand through a space 60 by 40 feet, each man armed with a mess equipment in either fist, ready to go over the top and break the bread line. Breaking the bread line is the proper phrase. On this trip alone they will consume 75,000 loaves and use up 2,000 loaves more for sandwiches when they leave the ship.

"There is no vast space for all this—but perfect organization, four clean kitchens, and a mess force of 138 men turn the trick without a tangle. From potatoes to pies, from ice cream to sauerkraut, from grapefruit to onions, from jam to sardines, the allotment is drawn from its shadowed hiding place below where the removal of several pounds hardly leaves a dent. And handling 180 varieties of food in quantities that range from 800 pounds to 79 tons speaks almost for itself.

"Just how many calories 750,000 pounds of food contain you can figure for yourself on the next rainy afternoon."

Members of the National Coffee Roasters Association to Convene.

The Eighth Annual Convention of the National Coffee Roasters Association will be held at the Hotel Winton, Cleveland, Ohio, on Wednesday and Thursday, November 13 and 14, 1918. A very large attendance is expected.

Smoked Shark as War Ration.

Smoked shark meat as a war ration will soon make its appearance on the market, according to information of the Department of Commerce. For some time past the department has endeavored, through demonstration work, to create a substantial market for the flesh of the "tiger of the seas." Representatives of the Bureau of Fisheries went to Florida to demonstrate methods of smoking the fish. A Mayport, Fla., fisherman has taken up the smoking of shark meat and is prepared to fill orders. Other firms along the Atlantic coast are also preparing to put shark meat on sale.

Dr. J. H. Landis Dies.

It is with much regret that we learn of the death of Dr. J. H. Landis, late Health Officer of Cincinnati, whose demise occurred a few weeks ago. Dr. Landis was President of the Ohio Academy of Medicine, physician at St. Mary's Hospital, and Professor of Hygiene at the Ohio-Miami Medical College. He was also a member of many medical societies—local and national, and was a champion for the best public health enactments. By his death, Cincinnati lost one of her most progressive men.

The United States Department of Agriculture, Bureau of Chemistry, has recently issued an index to Service and Regulatory Announcements 1 to 22, under the serial Service and Regulatory Announcements.—Chemical Index, 1918.

Germany's Big Work in Dehydrated Food.

The vegetable-drying industry in Germany has developed tremendously during the war; in fact, it has developed to such an extent that it may be taken to have reached its zenith, and lack of vegetables alone can prevent further expansion.

The "Deutsche Tageszeitung" reported this in quoting an address which was delivered before the German Agricultural Society early in this year by Dr. Eisener, a member of the "Central Office for the Drying Industry." The number of factories established for the purpose of drying vegetables for human consumption, and for feeding purposes has increased to such proportions, according to the doctor, that even kitchen refuse is being experimented with in the larger cities. He predicts that the importance of this industry will greatly diminish after the war, when Germany becomes less dependent upon its own production of vegetables than now, and, therefore, does not need to be so sparing.

According to a recent census, Germany now possesses over 700 factories for drying, especially potatoes, 150 corn-drying establishments, 400 open drying plants suitable for partly desiccating different products, 250 vegetable-desiccating factories, 22 milk-drying establishments, and 400 plants established especially for the drying of cabbages.

The "Eleventh Supplementary Memorandum of War Economic Measures," laid before the Reichstag early this year, gives the following figures regarding potatoes dried in Germany during the years mentioned as follows: 1913-14, 11,500,000 hundredweight; 1915-16, 17,500,000 hundredweight; present capacity, 37,000,000 hundredweight. The same memorandum further states that about 200 of Germany's total of 1,500 malt kilns are equipped for vegetable drying.

Vegetable drying in Holland was quite unknown before the war, but during the past three years numerous factories have sprung up in all parts of the country, and vegetable drying is today one of Holland's most profitable industries. The profit in this industry is largely due to the very strong market in Germany for Dutch dried vegetables.

The Dutch industry latterly has been working under serious difficulties on account of lack of fuel. Formerly kerosene was largely used in these factories, but several months ago the stocks of kerosene in Holland became so small that the Government discontinued permitting its use for the purpose of drying vegetables. German coal was then resorted to, low-grade Dutch anthracite being unsuitable and unavailable in sufficient quantities. But supplies of German coal have also failed. At the present time most of the factories are using wood almost exclusively as fuel.

The "Norddeutsche Allgemeine Zeitung" of February 2, 1918, contained a lengthy article describing the fruit and vegetable situation. As a result of the extreme disorganization of the fruit and vegetable trade during the winter of 1915-16, and the consequent shortage in many localities—particularly in some of the larger cities—of various kinds of fruits and vegetables, the Imperial Office for Vegetables and Fruit was established in May, 1916, its object being to institute a rational system of maximum prices, and at the same time to devise a scheme for equitable distribution of the limited quantities of fruit and vegetables.

This officials divided into a commercial division, which in turn is organized into a limited company, and an administrative department, which is an Imperial

governmental office operating under the immediate supervision of the Imperial Office for Vegetables and Fruit. The participants in this corporation are the Empire, the Federal States, some of the larger communal unions, and the "Union of German Mercantile Associations," run on no-profit basis. There is a limit of 5 per cent returns on the capital invested. Other profits go to the Imperial treasury.

The above described organization has grown during the past two and a half years to very large dimensions. Branches of the Imperial Office for Vegetables and Fruit have been established in all parts of Germany, and purchasing agencies have even been established in various neutral countries in order to undertake the purchase of fresh and preserved vegetables on a large scale and in an economical fashion. In the Netherlands this purchasing is in the hands of a so-called Dutch concern called the Zentral Einkaufsgesellschaft, which was established in the last months of 1916, and which, from that time to the present, has had a monopoly on the purchasing of vegetables and fruit for shipment to Germany.

By order of January 23, 1918, the German War Food Minister placed the so-called German Imperial Office for Vegetables and Fruit (administrative division) in supreme charge of all regulations regarding the working up of vegetables and fruit for commercial purposes.

Along with its work of promoting the economic use of vegetables, the German Imperial Office for Vegetables and Fruit has been carrying on an active campaign to popularize the use of dried vegetables. Comprehensive practical cooking experiments have been carried on, and on the basis of these experiments pamphlets containing recipes for the household use of various vegetables have been issued in large numbers and distributed widely. At present the Imperial Office is said to be conducting careful experiments as to the best method for drying vegetables so as to preserve as much as possible the original flavor. Dried vegetables are not used to any extent in Holland.

An owner of a large vegetable drying factory in Holland recently stated that the drying processes now used in Holland reduce the weight of root vegetables, including potatoes, by about 80 or 85 per cent, and reduce the weight of such vegetables as celery, cabbage, lettuce, etc., by as much as 90 or 93 per cent. The fact that the weight is so greatly reduced, coupled with the fact that the volume is not reduced in an equal ratio, makes it possible to pack dried vegetables in containers of very light material. Indeed, practically all of the dried vegetables sent from Holland to Germany are packed in large paper bags.

Making Use of Frozen Potatoes.

Experiments made by the Home Economic Division of the Minnesota Agricultural Experiment Station indicate that the flour made from frozen potatoes is markedly superior to that made from unfrozen potatoes, the raw potato flavor having been almost entirely eliminated.

In these war times, when we must economize food, car space and by-products if we are to win the war, the carloads of frozen potatoes that reach our terminal markets must not be wasted; not the bushel or so of potatoes that freeze in the farmer's pit, but the hundreds of carloads that freeze in transit, and of the tens of millions of dollars that we are now paying out in freight charges on water in potatoes.

Every year hundreds of carloads of potatoes are frozen in transit and are thrown upon the dump when they reach the terminal market. This is an absolutely unjustifiable waste of food according to Dr. R. A. Gortner, a member of the Minnesota section of the American Chemical Society. The mere freezing of a foodstuff does not alter its feeding value, all of the carbohydrates, proteins, etc., upon which the feeding value depends are still there, the only difference being that the water exists in one case as free or loosely combined and in the other instance as ice. As long as such materials are kept frozen their food value will remain unaltered, and it is only when it has thawed out that deterioration sets in.

Deterioration of food is of two sorts, that due to bacteria and that due to substances in the food itself. When the potato is frozen the cells are more or less broken up and the enzymes come in direct contact with the starch, so that its transformation to sugar becomes very rapid. In other words, the potato digests itself just as surely as we would have digested it if we had eaten it. This is the first change which potatoes undergo upon thawing. The second stage in the deterioration of frozen potatoes is due to these growths. The remedy for the prevention of both changes is to keep the potatoes frozen until they can be used.

Much of the German war bread is made from potato flour, and it should be much easier to make potato flour from frozen potatoes than from those which have not been frozen, as the first essential is to get rid of the water. Potatoes consist of roughly 20 per cent solids and 80 per cent water, or in other words, there are 48 pounds of water in a bushel of potatoes. When this water is squeezed out of the potato it carries with it the greater part of the enzymes, and the remaining enzymes in the dry potato cake left in the press will have so little water available that their action will be very slow and deep seated changes should not take place before the cake becomes dry. Even then, should it be impossible to proceed with the drying at once, it would be easy to allow the potato cake to freeze again and to leave it in this condition, or to ship it in this condition to some point where it can be dried. Besides this gives a bushel of ordinary potatoes weighing only about 18-20 pounds.

Stocks of Grain, Flour, Corn Meal and Other Food Products in the United States.

The commercial stocks of wheat reported to the Department of Agriculture in a food survey dated September 1, 1918, amounted to 114,331,842 bushels. These figures refer to stocks actually reported and do not represent the total commercial stocks of the country, nor do they include stocks on farms on the date of the survey. The stocks reported were held by 11,271 firms, consisting of elevators, warehouses, grain mills and wholesale dealers, and were equal to 296.6 per cent of the stocks held by the same firms on September 1, 1917, or nearly three times as large as the stocks on hand a year ago.

The commercial visible supply figures, as published by the Chicago Board of Trade for the nearest date, show 48,821,000 bushels of wheat as against 5,058,000 bushels a year ago, and the corresponding Bradstreet figures for 1918 show 54,236,000 bushels as against 10,315,000 bushels for 1917. These figures, as well as the results of the more extensive survey, show a very great relative increase in the commercial stocks of wheat on September 1 this year as compared with the

same date in 1917. This increase, as pointed out in connection with the report for August 1, is due to an earlier season and a more rapid movement of grain into commercial channels, as well as to an increased yield.

The commercial stocks of other cereals reported for September 1, 1918, according to the department statement, were as follows: Corn, 16,715,978 bushels; oats, 64,683,859 bushels; barley, 16,299,104 bushels; and rye, 4,149,612 bushels. These stocks represent the following percentages of the corresponding stocks on September 1, 1917: Corn, 208.6 per cent; oats, 140.1 per cent; barley, 84 per cent; and rye, 152.8 per cent.

The commercial stocks of flour and corn meal as reported for the survey were: Wheat flour, white, 4,539,328 barrels; whole wheat and graham flour, 147,465 barrels; barley flour, 167,158 barrels; rye flour, 225,127 barrels; corn flour, 30,522,276 pounds; corn meal, 72,642,853 pounds; buckwheat flour, 2,384,530 pounds; mixed flour, 8,333,324 pounds. These stocks represent the following percentages of the stocks on hand a year ago: Wheat flour, white, 140 per cent; whole wheat and graham flour, 164.7 per cent; barley flour, 2,690.4 per cent; rye flour, 274.4 per cent; corn flour, 920.3 per cent; corn meal, 189 per cent; buckwheat flour, 81.7 per cent; mixed flour, 202.2 per cent.

Elevators, warehouses and wholesale dealers reported stocks of beans amounting to 14,477,630 bushels, while wholesale grocers and warehouses reported the following commodities in the amounts indicated: Rice, 56,897,261 pounds; rolled oats, 44,680,074 pounds; canned salmon, 84,195,180 pounds; canned tomatoes, 61,692,361 pounds; canned corn, 23,063,966 pounds; sugar 311,194,430 pounds. These stocks represent the following percentages of the corresponding stocks on hand September 1, 1917: Beans, 156.1 per cent; rice, 30.7 per cent; rolled oats, 126.5 per cent; canned salmon, 104.5 per cent; canned tomatoes, 107.8 per cent; canned corn, 71 per cent; sugar, 99.9 per cent.

Amendment to Regulations 18 and 25, B. A. I. Order 211. (Regulations Governing the Meat Inspection of the U. S. Department of Agriculture.)

U. S. Department of Agriculture,
Office of the Secretary,
Washington, D. C., May 1, 1918.

Under authority conferred by law upon the Secretary of Agriculture, regulation 18, section, 3, paragraph 2, of the regulations governing the meat inspection of the United States Department of Agriculture as amended by Amendment 2 to B. A. I. Order 211, dated November 20, 1915, and regulation 25, section 4, paragraph 3, of the said regulation, as amended by said Amendment 2 to B. A. I. Order 211, are hereby revoked and the following substituted in lieu thereof.

This amendment for the purpose of identification is designated as "Amendment 6 to B. A. I. Order 211" and shall become and be effective on and after May 15, 1918.

D. F. HOUSTON,
Secretary of Agriculture.

Regulation 18. Section 3, Paragraph 2.—Any meat or product which has been inspected and passed under these regulations and bears the inspection legend may be shipped in interstate or foreign commerce, provided it is sound, healthful, wholesome, and fit for human food and has not been processed, reprocessed or changed in any manner so as to alter the character of the product.

Regulation 25. Section 4, Paragraph 3.—Jobbers, wholesalers and others who operate establishments in which slaughtering or processing is done without the inspection provided for in these regulations and who receive meat or products which have not been processed other than under inspection in compliance with these regulations may ship from such establishment in interstate or foreign commerce under section 5 of this regulation any meat or product which bears the inspection legend and is sound, healthful, wholesome and fit for human food and has not been processed, reprocessed or changed in any manner so as to alter the character of the product.

RECENT PATENTS

The following patents of interest to readers of this journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,274,704. Bread-making machine. James Garvey, Los Angeles, Cal.

1,274,748. Process of treating milk. Niels D. Nielsen, Elyria, Ohio.

1,274,750. Process of treating milk and the like. Niels D. Nielsen, Elyria, Ohio.

1,274,880. Baking-oven. C. Wells Helm, Chicago, Ill.

1,274,898. Manufacture of leavened bread. Henry A. Kohman, Pittsburgh, Pa., assignor to Ward Baking Co., New York, N. Y.

1,275,085. Peanut-roasting device. Samuel C. Peckham, Mexia, Tex.

1,275,229. Fish-dressing machine. Clyde C. Curtis and Howard J. Sackett, Anacortes, Wash.

1,275,254. Manufacture of dry extracts of partly-fermented beverages. Herman Heuser, Chicago, Ill.

1,275,308. Process of manufacturing vegetable proteid substances. Sadakichi Satow, Sendai, Japan.

1,275,314. Nut-blanching machine. Victor F. Simon, Chicago, Ill.

1,275,547. Apparatus for drying fruit. Thomas W. W. Forrest, Oakland, Cal.

1,275,560. Washing and blanching machine. Frank O. Hutton, Sacramento, Cal., assignor to Libby, McNeil & Libby, Chicago, Ill.

1,275,711. Method of preparing food products of starchy material. Frederick G. Lorenzen, Battle Creek, Mich., assignor to Kellogg Toasted Corn Flake Co., same place.

1,275,978. Butter-making machine. William R. Nicoll, Owatonna, Minn., assignor to Davis-Watkins Dairymen's Mfg. Co., North Chicago, Ill.

1,276,006. Apparatus for making confections. Alonzo L. Bausman, Springfield, Mass., assignor to National Equipment Co., same place.

1,276,298. Beverage extract. Warren H. White, Tacoma, Wash.

1,276,500. Drier for alimentary paste. Paul De Martini, Jamaica, N. Y.

Federal Trade Commission's Powers Defined.

The United States Circuit Court of Appeals for the Second Circuit, sitting in New York City, has refused to interfere with the taking of testimony by the Federal Trade Commission against the Nulomoline Company, manufacturing and selling invert sugar syrup.

Contention was made that under the Federal Trade Commission act the Commission has no authority to pass upon the validity of a patent and that under the act, the Circuit Court of Appeals may prevent the Commission from taking testimony touching the validity of a patent.

The court held, however, that the act gives it no power to prevent the Commission from ordering that

such testimony be taken, as it is not an order to cease and desist from unfair method of competition, the authority to review which is given to the court by the act.

Food Inspection Decision 177.

SODA WATER FLAVORS AND SODA, SODA WATER.

The following definitions and standards for soda water flavors and soda, soda water, were adopted by the Joint Committee on Definitions and Standards November 19, 1915, and were approved by the Association of American Dairy, Food and Drug Officials August 10, 1916, and by the Association of Official Agricultural Chemists November 21, 1917:

1. *Ginger ale flavor* is the water-soluble product obtained from ginger, with or without flavoring substances which do not simulate the flavor or pungent effect of ginger. The predominating flavor of the product is that of ginger.

2. *Ginger ale with capsicum flavor* is the water-soluble product obtained from ginger and capsicum, with or without other flavoring substances. The predominating flavor of the product is that of ginger.

3. *Sarsaparilla flavor* is the water-soluble product prepared with oil of sassafras and methyl salicylate or oil of wintergreen or oil of sweet birch and with or without other essential oils or extract of sarsaparilla.

SODA, SODA WATER.

1. *Ginger ale* is the carbonated or artificially carbonated beverage prepared with potable water, acidulated sugar (sucrose) sirup, and ginger ale flavor.

2. *Ginger ale with capsicum* is the carbonated or artificially carbonate beverage prepared with potable water, acidulated sugar (sucrose) sirup, and ginger ale with capsicum flavor.

3. *Sarsaparilla* is the carbonated or artificially carbonated beverage prepared with potable water, sugar (sucrose) sirup, and sarsaparilla flavor. It may or may not be acidulated.

Additional definitions and standards for soda water flavors, soda, soda water, under consideration.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

CLARENCE OUSLEY,

Acting Secretary of Agriculture.

Washington, D. C., August 20, 1918.

Prospects for By-Product Industries.

Considerable progress has been made in the last few years in the manufacture of lemon by-products. Before then various attempts were made by commercial concerns who made some progress but eventually discontinued. Finally the lemon growers' organization concluded that they would be obliged to take hold of the problem to determine whether the low-grade fruit could be successfully converted into by-products with the high labor costs here compared with Italy. The increasing lemon crop and the necessity of shipping only good-grade and good-keeping lemons in the fresh state showed the need of developing an outlet for large quantities of the poorer fruit.

A plant was built at Corona, Cal., which is manufacturing high-grade citric acid, and also making and experimenting on other products. Last season it handled over 5,000 tons of lemons and produced about 180,000 pounds of citric acid. Another plant, near San Diego, has been successfully manufacturing citrate of lime.

Penalties Under Food Control Act

For violations of the U. S. Food Administration's regulations a number of licensees were penalized during the past few weeks. Among them were the following:

Elmer E. Pierson, wholesaler and commission merchant of Kansas City, Mo., had his license revoked October 1 because he had sold a carload of feed as flour fit for human consumption.

E. L. Wittmeyer & Co., 30 Broad Street, New York City, wholesalers and brokers of staple foodstuffs, had their license revoked for an unlimited period for attempted profiteering. In addition to other violations of the Food Control Act and the rules and regulations of the Food Administration it was found that the senior partner, E. L. Wittmeyer, had secured advance information of trade conditions unfairly, as a result of which he had attempted to obtain exorbitant profits from sales of foodstuffs to the Allied governments. He failed in this attempt, and is being held to await the action of a grand jury at Washington, D. C., on a charge of conspiracy to manipulate food prices.

Mrs. Martha Embury and Bernard S. Weisberg, clerks at the Food Administration, were taken into custody at the same time as Mr. Wittmeyer, through the joint efforts of the Department of Justice and the Intelligence service of the Food Administration in running down a suspicious offer of 100,000 cases of condensed milk for sale through the Allied Provision Export Commission to the Allied Governments. Mrs. Embury and Mr. Weisberg confessed complicity in a plot with Wittmeyer, by which the latter was given advance information that there was about to be a call for "spot" milk for export, which enabled him to buy at a comparatively low figure and offer for resale at an advance of from \$30,000 to \$50,000. It had been agreed that they were to share the prospective profits in this deal.

The Britling Cafeteria at Louisville, Ky., was allowed to contribute \$1,000 to the Red Cross, rather than close the cafeteria, and was also deprived of its baking license for two weeks, for failure to use the prescribed amount of wheat substitutes, and for having served excessive amounts of sugar to its patrons.

Louis A. Federer, wholesaler, commission merchant and broker of fresh fruits in St. Louis, was deprived of his Food Administration license for having failed to remit to the consignor a check covering the sale of one car of cantaloupes, and this was in defiance of an order from the Food Administration.

The C. A. Gambrill Manufacturing Co., millers, of Baltimore, Maryland, operating the Patapsco Mills at Ellicott City, Maryland, had their license revoked until further notice, for having made erroneous reports to the Food Administration after having been warned. They had also evaded the rule in connection with the requirements for the sale of substitutes.

The Brennan Grain Company, Chelsea, Mass., has been prohibited from buying wheat flour from licensed dealers until further notice for having sold this flour at excessive prices, without proper substitutes, and in greater quantity to the consumer than allowed by regulation. After having been reprimanded they continued their violations and ignored a summons to appear before their County Food Administrator, and later a like call to a hearing of charges against them before the Federal Food Administrator for the State.

The William Thomas Co., 214 Washington Street, New York City, brokers in fresh fruits, have had their license revoked for an unlimited period for soliciting shipments of strawberries by methods that constituted unfair business practice. They claimed, according to the evidence, to be able to sell berries for growers at a material advance over cash market prices then current, and they failed to reply to letters from the Food Administration. It was reported that they had left the country without settling for shipments.

The George A. Taylor Company, Oneida, New York, millers, warehousemen and elevator operators, have had their license revoked for two months from September 16th, for having failed to put their license number on bills and accounts, as required, and for having sold wheat flour without substitutes and in excessive quantities.

Harris & Dixon, Indianapolis, Ind., had their place of business closed for one week for profiteering in sugar, while Eli Emil of the same city, has suffered a like penalty for charging too high prices for sugar and wheat flour and for failure to sell the latter with substitutes.

The Boyar-Sicard Co., Minneapolis, Minn., and William Gilles, Fargo, N. Dak., had their license revoked, the former for ten days and the latter for one month, both beginning with September 16th, both having been found to be at fault. The Boyar-Sicard Co. had shipped a carload of fresh peaches to William Gilles, who refused the consignment, saying that they had not complied with his instructions when the order was placed, and the peaches were allowed to deteriorate on the track, which is deemed a wasteful practice by the Food Administration.

R. P. Koenig & Company, Watertown, Wis., have had their license revoked for an unlimited period for profiteering and unfair dealing with their customers and the Federal Food Administrator for their state.

Miner, Read and Tullock, wholesale grocers of New Haven, Conn., were allowed to contribute \$5,000 to the Red Cross, which is the largest amount so contributed to that organization in their state, for averaging selling prices in such a way as to net excessive profits. This penalty was in lieu of revocation of license and closing the firm's doors, as the Food Administration decided this would interfere too seriously with the necessary food distribution.

The New Gin Company, Greenville, Texas, were permitted to contribute \$400 to the Texas branch of the Council of National Defense, for having violated the regulation forbidding a dealer to pay more for cottonseed in one district than another, and this contribution was accepted, instead of enforcing a revocation of license, because of the extreme hardship which the closing of any of the company's plants would inflict upon producers at the already crowded gins at Greenville, Caddo Mills, Royse and Cumby, where the company's plants are situated.

George N. Fries, a grocer in Center Market, Washington, D. C., had an unlimited "unfair order" placed against him by the Food Administration, instructing all licensees to discontinue all business dealings with him in licensed commodities, for having sold sugar in 10-pound lots to individual customers, and to conceal this violation he had been having his patrons sign receipts marked merely "O.K." instead of signifying that they were for sugar.

Sever Simonson, an Indian trader at Pryor Crow Reservation, Mont., has been permitted to contribute \$100 to the Red Cross, in lieu of a more drastic penalty, for having paid little attention to the regulations concerning the wheat substitute rule, believing that his isolation among the Indians justified his slackness. It was pointed out to him, however, that half his trade is with white farmers and that he runs a mess hall at Pryor.

Various bakers have been penalized for violation of baking regulations by order to cease turning out products other than bread and rolls during the periods designated: Townley Baking Co., Long Branch, N. J., four days; Buckley & Co., San Francisco, two weeks; N. Kuz and K. Moll, San Francisco, two weeks; and the Cheyenne Steam Bakery, Cheyenne, Wyo., sixty days.

The Meta Rolling Mills, of Meta, Mo., had their license to operate an elevator revoked for an unlimited period, effective September 20, for having shown an entire disregard for rules and regulations.

The Celery Vig Bottling Co. of Arizona has been refused sugar for its Phoenix branch, because the plant began operations later than April 1, 1918, and for its Lowell branch because the management filed a sugar statement that was misleading and signed by an assumed name. Under Food Administration regulations no manufacturing concern established after April 1 can be allotted sugar.

Bie & Schiott, ship chandlers, of Baltimore, New York, Philadelphia, Norfolk and Newport News, have had their license revoked, effective September 23, until further notice, for having charged excessive prices for food commodities delivered to the U. S. Shipping Board and private customers; rendering incorrect reports to the Food Administration; and paying large commissions to ship captains and others as an inducement to having orders placed with this concern.

The Booker Packing Co., of Indianapolis, Ind., have had an unlimited "unfair order," effective for an indefinite period, placed against them for giving short weight and handling meat unfit for human consumption.

The Farmers Gin Company, Mabank, Tex., brokers of cottonseed and retailers of cottonseed meal, had their license revoked for one month, from September 26th, for not having abided by prices recently established by voluntary agreement between the Food Administration and representatives of their

trade, and also for having disobeyed an order of the Federal Food Administrator for Texas to suspend their seed operations.

L. Spring of 85 Brighton Street, and J. Springer, of 6 Cottling Street, fruit and produce dealers of Boston, have been required to forfeit all their supply of sugar and have been forbidden to sell sugar until January 1, 1919, for having violated the rules and regulations of the Food Administration. They have also been required to post signs on their premises for thirty days stating that they had violated the rules and regulations of the Food Administration, and will be permitted to make no further sales of flour until the required amount of substitutes has been purchased.

The David Stott Four Mills, Inc., 1041 Grand River Avenue, Detroit, Mich., have had their license revoked until further notice, effective October 5th, for having failed to keep proper records and accounts and to render correct reports representing its actual business transactions verifiable from its accounts and records, as required by the Food Control Act, and the rules and regulations of the Food Administration. While the violations and errors were numerous, it was found that the company's reported jobbing department was so purely fictitious as to indicate an intentional evasion of the requirements for filing accurate reports.

Assistant Secretary Pearson Resigns.

Dr. R. A. Pearson has resigned from the position as Assistant Secretary of Agriculture in order that he may resume his duties as president of the Iowa State College of Agriculture and Mechanic Arts. Dr. Pearson went to Washington at the urgent request of Secretary Houston shortly after the United States entered the war, the college having very generously consented to have him assist the department in the handling of the many emergency problems that had arisen. After an absence from the college of nearly a year and a half, Dr. Pearson felt that it was necessary for him to return to his former position and to give his entire time and attention to the affairs of the college.

Secretary Houston, especially in view of the generous action of the college authorities and of Dr. Pearson's prompt response to the call for service, did not feel that he could consistently ask either the college or Dr. Pearson to make further sacrifices and permit him to remain in Washington longer. The Secretary expressed his gratitude to the Iowa State College for its kindness and consideration in temporarily releasing Dr. Pearson for service in the department and to Dr. Pearson for his loyal, zealous, highly intelligent, and efficient service. He requested Dr. Pearson, before actively resuming his former duties, to join, as president of the Iowa State College of Agriculture and Mechanic Arts, a small committee of men familiar with food production and agricultural organizations and activities in this country which the department is sending to England, France and Italy for the purpose of securing general information regarding agricultural problems and conditions in those countries. Dr. Pearson consented to do this, and is now in England with the party.

Mr. Christie Is Nominated.

The nomination of Mr. G. I. Christie, of Indiana, to succeed Mr. Pearson as Assistant Secretary of Agriculture, has been transmitted to the Senate. In April of this year Mr. Christie went to Washington as assistant to the Secretary to aid the department in further organizing and developing its farm-labor activities. More recently he has been representing the Secretary in the field in connection with loans from the President's special fund to farmers in Montana, North Dakota and Washington.

Mr. Christie was graduated from the Ontario Agricultural college, receiving the degree of B. S. A. He also received the degree of B. S. A. from the Iowa Agricultural College. He was assistant in agronomy, Iowa State College, Ames, Iowa, 1903-1905; assistant in soils and crops, 1905-1906; and he has been superintendent of agricultural extension work in Indiana since 1906. He is a member of the National Educational Association, the Indiana Corn Growers' Association, the National Seed Analysts' Association, and the Association for the Promotion of Agricultural Teaching. He was superintendent of the Indiana agricultural exhibits at the Panama Exposition, and was chairman of the Agricultural Committee of the Indiana centennial celebration in 1916.

Advise Denaturing Low-Grade Milk.

The custom of officials in many cities to dump into the sewers milk that does not come up to local requirements is an inexcusable waste, especially in war time, according to dairy specialists of the United States Department of Agriculture. A simple and inexpensive process of denaturing will leave it still a valuable food for animals. The addition of a 3 per cent solution made from rennet, strength 1 to 30,000, in the proportion of 2½ ounces to 10 gallons of milk, at a temperature of 53 degrees F., or higher, will curdle the product within an hour. This will make the product no longer salable as milk, but still allow it to be fed to calves, pigs or chickens.

The specialists believe this method deserves attention now as one way of furthering America's campaign to stop waste and make use of every available quantity of food and feed.

Red Cross to Establish Dairy Plant in France.

Fresh milk will be supplied to 20,000 sick and wounded soldiers in France by 1,000 cows which the French Government has agreed to loan to the American Red Cross, according to an announcement just issued by the Red Cross. With these cows the Red Cross will establish a model experimental dairy plant at the largest American army hospital in France, \$5,000 having been set aside for the inauguration of the plant. As the dairy will be operated by convalescent soldiers, the cost of maintenance will be comparatively small. It is pointed out, however, that cost is not important, as fresh, pure milk is absolutely essential in the proper diet of the cases at the hospitals.

Salt Sacks Standardized.

Salt producers, at a conference with officials of the Food Administration, lined up solidly in the campaign for conservation of war necessities. Their product, which has been packed in almost countless sizes and styles of package, will be put up in only a few standard-sized sacks and when packed in wood the barrels, where possible, will be hooped with wood instead of steel.

The first measure will save large quantities of cotton; the other will conserve steel. Salt hereafter, when packed in cotton, may be had in only five, ten, twenty-five pound or larger sacks. Proportionately, a one-pound sack will contain 50 per cent more cotton than a five-pound sack, and in addition makes a needless drain upon labor.

Food Specialists in Cantonments and Camps.

The latest step in curtailing waste and establishing conservation in National Army camps has been the appointment of 60 new nutrition officers to carry on this work. These men will be food specialists who will advise as to the nutritional value of dietaries, as well as co-operate with mess officials to prevent adulteration and spoilage of food.

In one camp where a two-day survey was made, the average edible waste in seven companies, totaling 7,135 men, was found to be 1.12 pounds per man per day. Mess sergeants and cooks were given instructions in matters of mess economy, and later on, a second two-day survey was taken, when the average edible waste was found to be 0.43 pound per man per day—a saving of 0.69 pound. It was estimated that if this same rate of conservation was established for the entire camp of 15,000 men it would represent a money saving to the Government of \$338,000 annually.

Cooperative Experiments in Fish-Food Preservation.

Arrangements have been made for co-operative experimental work by the Bureau of Fisheries and the Bureau of Chemistry on problems of preparation and preservation of fishery products for food. The bacteriology of the reddening of salt codfish and methods of preventing it and the autolysis of fish meat are being studied by Dr. W. W. Browne, of the College of the City of New York. Dr. G. G. Scott, of the same institution, is working on methods of drying fish in hot-air dryers without salt, and Dr. F. C. Weber, of the Bureau of Chemistry, is working on the canning of frozen fish and on problems connected with the canning of grayfish and general fish drying. The work is being done at Perkins Laboratory, Gloucester, Mass., with the co-operation of the Gorton Pew Fisheries Co.

Increased Consumption of Oranges One Result of Sugar Shortage.

Attributing the large orange consumption this season to the increased demands made on the crop by the thousands of orange-juice stands that have sprung up throughout the United States in the last year, the editor of the *Fruit World* says:

"The world-wide shortage of sugar, estimated at approximately 2,000,000 tons annually since the war began, has caused the restriction of sugar consumption in the manufacture of many of the popular summer drinks. This has increased the consumption of oranges this year and has created a greater market activity in spite of the abnormally high prices caused by the crop shortage following the heat wave one year ago last June. And so the orange-drink stands have alleviated the demand on the sugar supply but also have increased the demands on a shortened orange crop."

Breadstuffs to Be Exported.

Under the agreement entered into by the Food Administration with the food controllers of the Allied Nations, our breadstuffs export program for the coming year will be: wheat, rye, barley and corn, or flours calculated as grain for breadstuffs, 409,320,000 bushels, of which from 100,000,000 to 165,000,000 bushels may be cereals other than wheat.

Use of Sweet Cream for Butter Causes Saving.

Much money is lost in Oregon and other states by selling cream which will not produce the best butter.

Eighty-five per cent of the 627,000,000 pounds of creamery butter made in the United States in a year will not grade extra. Taking this into consideration the loss can be estimated at \$25,000 a year, according to V. D. Chappell, assistant professor of dairy husbandry in the Oregon Agricultural College.

As a result of the change from the whole milk to the cream gathering system, there has been a decline in the quality of butter. This is due to the fact that the milk was delivered once and in some cases twice daily while with the cream gathering system the cream is delivered once, twice or three times a week. Very seldom, in fact, is cream delivered to the creamery daily.

In the case of milk, it was necessary that it be delivered sweet, but cream would be accepted, even though it was sour. Sour cream is not necessarily poor cream. Practically all creamery butter is made from sour cream but the best butter is made from properly soured cream only. Cream that is held too long on the farm cannot be properly soured. The cream gathering system began at the time when the cream separator came into use. Very few farmers understand why cream sours and consequently do not know how to keep it sweet.

"Many farmers deliver only sour cream, while many others seldom deliver sour cream," said Professor Chappell. "I once worked in a creamery when a farmer made a standing offer of a 10-cent cigar every time he delivered sour cream. In three years I received four free cigars and he delivered cream only three times a week. A farmer of that type always gets all that is coming to him while the one who delivers the poor cream may get the small end of the bargain.

"Poor cream never makes a good product. A poor product never brings a good price—the farmer pays the difference.

"During the season of cool weather it is not difficult to keep cream sweet, but as the weather warms up it is necessary to keep the cream cool until delivered. The bacteria which cause cream or milk to sour grow many times faster at a warm temperature than at a cool temperature.

"The producers of cream as well as those of other commodities recognize the justness of a plan by which payment can be made on the basis of quality. This is the basis governing the sale of wheat, cattle, hogs, apples and eggs, and there is no logical reason why it should not apply in the case of cream. It costs more to produce sweet cream, at least if time is of any value, and it should be rewarded by the paying of a higher price.

"If a creamery were paying 3 cents higher for butterfat in sweet cream than for butter fat in sour cream, it would amount to a difference of about 85 cents for a 10-gallon can of 35 per cent cream. Now, supposing a farmer delivered 10 gallons of cream; in a year he would be \$44.20 to the good. With this he could make a good start on building a milk house.

"Delivering sweet cream is well worth considering. At a certain creamery they used to receive practically all sour cream but they began paying 3 cents extra for fat in sweet cream and at the present time they are receiving more than three times as much sweet cream as they do sour cream."

St. Louis Food Conservation.

The remarkable work done by the Women's Central Committee on Food Conservation in St. Louis is attracting nation-wide interest. The chain of Community Kitchens which have been established by this Committee is the only one of its kind in the country. It is the purpose of the Committee to make the Community Kitchens a center radiating economics for better home management throughout the surrounding territory.

These Kitchens are being introduced as a war measure and are established to provide a well-balanced ration at cost for that part of the population at present unable to feed itself either adequately or healthfully. It is an efficient way of handling the food problem of the people on a community plan. In every case the Kitchen is a self-supporting and self-respecting enterprise and is not in no way to be considered in the light of charity. The money for the establishment of these Kitchens was earned through a Patriotic Food Show in St. Louis. The first one to be established was equipped at a cost of about \$1,000. However, this low cost was made possible only through the remarkable co-operation of the public in providing the necessities at low cost. The great public interest and approval of the enterprise caused large donations of chipped china, shelving for the supply room, lighting fixtures, water heaters and many other necessities.

The location of these Community Kitchens has been determined only upon careful investigation, and the poverty of the neighborhood, the presence of factories—especially factories employing women—the proximity of a market and the density of the population have been the deciding factors. The first experimental kitchen is located in the heart of an industrial district. There are ten large factories employing many women in the immediate neighborhood. Four day nurseries are filled to capacity in this district, giving proof that many mothers are at work in the factories. It was found that there was no more needy district in the city last winter than this one.

The Kitchen is conducted on the following schedule: In the morning, from 6:30 to 8:30, cash-and-carry milk, bread and cereals are for sale. At noon, the Cafeteria serves a complete meal, in a single dish, of soup, with a roll and coffee. Soup wagonettes are wheeled to the factories in the neighborhood; each wagon is equipped to serve 80 pints, carried in small containers, and the same number of two-ounce rolls; a pint of soup and a roll is sold for five cents. In the afternoon, from 2:30 to 4:00, cooking demonstrations and talks are given by the St. Louis Home Economics Agents of the Agricultural Extension Service. In this way the Kitchen is made the neighborhood center for information in regard to questions of diet, of general hygiene and better home management. From 4:30 to 8:00 the Cafeteria is open for the evening meal, consisting of meat, a vegetable, a starch and a desert. Those who desire may carry their meal home. There are full and half portions sold. The entire meal costs, per person, 5 cents for the half portion meal and 10 cents for the full portion. During May, the first month, approximately 6,000 people were fed and the committee came out even on expenses.

The Women's Central Committee on Food Conservation also conduct cooking schools and the lessons are given by the Visiting Housekeepers, whose purpose it is to go as far as possible in directing the choice of the people towards those foods which are high in

nutriment, low in price and other than the especially compact foods which are being conserved for use across seas.

There is also a committee on Commercial Waste, whose duties are to make investigations of reports of waste, and to canvass all hotels and restaurants to obtain signatures for the observance of Wheatless Mondays and Wednesdays. There are many other branches of work in which the Committee is active and they are doing a great and permanent good.

Stockyards Regulations Amended.

Amendments to the regulations governing stockyards and dealers in live stock at stockyards subject to license under the supervision of the United States Department of Agriculture, were recently signed by the President. The amendments extend the regulations to include all persons not included in the proclamation of June 18, 1918, engaged in the handling, buying, selling or otherwise dealing in live or dead stock. All slaughterers and renderers who buy stock regularly at stockyards, directly or through exclusive agents, and who have not already obtained or applied for licenses, are now required to secure licenses as buyers. Such concerns which already have secured licenses and been designated as traders may submit their present licenses to the Bureau of Markets for the necessary correction without making another application for license.

Experiments Are Made to Conserve Shipping Space in Exporting Beef.

Maj. Gen. George W. Goethals, chief of the division of purchase, storage and traffic of the general staff of the Army, has commissioned Arthur A. Hammerschlag, president of the Carnegie Institute, and Lieut. Col. J. W. McIntosh, Subsistence Division, Q. M. C., N. A., to co-operate with the Chicago packers in experiments which may save up to 40 per cent of the tremendous cargo space now required for shipping fresh beef. President Hammerschlag and Col. McIntosh have already reached the stock yards and the experiments have begun.

The experiments contemplate not only the conservation of shipping space, but also the problem of having the packages small enough to be handled by the class of labor available at unloading ports overseas and the quick and convenient issue at supply depots in France.

They range from the mere cutting of the carcass into more convenient sizes and shapes to the entire boning of the carcass to be packed in boxes. It is estimated that if the plans prove practicable a saving of from 15 to 40 per cent of the room now used in transporting the same amount of beef will be made possible. Since fresh beef constitutes a considerable part of some 350,000,000 pounds of beef and pork products now sent monthly to allied countries, the saving by the new method may prove to be considerable if found practical. The bones and surplus fats salvaged by the operation will be converted into various by-products.

The chief difficulties encountered so far have been the necessity of obtaining enough labor sufficiently skilled in this particular work and the providing of facilities necessary to handle the quantities required without interfering with production of other meat products being prepared for our armies and those of our allies.

Three New British Food Regulations.

The British Ministry of Food recently issued orders regulating the price at which maize (corn) products and butter may be sold in the United Kingdom and imposing restrictions upon traffic in cereals. The order relating to maize products reads:

"A person shall not on or after September 2, 1918, sell or offer or expose for sale or buy or offer to buy by retail any maize flour, maize flake, maize semolina, hominy, ceraline, or maize meal at a price exceeding a rate of 4d. (8 cents) per pound.

"Except in such cases as the Food Controller may otherwise determine this order shall apply to proprietary brands of the articles mentioned in clause 1."

The order relating to butter, which is already in effect, stipulates that butter may not be sold at retail in the United Kingdom at prices exceeding the following:

"On the occasion of a sale by retail of any butter, the maximum price shall be at the rate of 2s. 4d. (57 cents) per pound, except that in calculating the maximum price chargeable on any sale any broken half-penny included in the maximum price shall count as a half-penny.

"No charge may be made for packing, packages, or giving credit; but if the butter is delivered, at the buyer's request, otherwise than at the seller's premises, an additional charge may be made for such delivery not exceeding a sum at the rate of 1/2d. (1 cent) per pound or any larger sum actually and properly paid by the seller for carriage.

"A food committee may from time to time by resolution vary the maximum price for butter sold by retail within its area or any part of such area."

The order restricting the sale of cereals applies to wheat, rye, barley and dredge corn and to tailings, dressing and screenings from these grains, and provides:

"(a) A person shall not on or after September 1, 1918, sell or offer to sell any article of a kind, to which this order applies, to any person other than (1) a miller buying for the purposes of a controlled flour mill; or (2) a recognized dealer in grain; or (3) a person requiring and holding a license granted by or under the authority of the Food Controller for the purpose of entitling him to use the article for a manufacturing business carried on by him; or (4) in the case of grain which is suitable for seed, a person buying grain specifically for the purpose of seed.

"(b) This clause shall not apply to any article in respect of which it is proved that at the time of sale it was unfit for use in the manufacture of human food."

Dr. Lucius P. Brown Is Reinstated.

While the reinstatement of Dr. Brown in the Health Department was made rather grudgingly, it ought to be generally understood that the original charges against him completely broke down. Indeed, they were virtually withdrawn. It was upon later complaints, largely relating to routine of administration, that Dr. Brown was examined and finally acquitted. The first investigator, the Hearstish commissioner who made the flamboyant attack upon Dr. Brown, alleged various high crimes and misdemeanors which there was afterwards no serious effort to sustain. They were soon dropped. But it ought not to drop from the public memory that this attempt, over which there was such a flourish, from the Mayor down, to discover a scandal in the Health Department came wholly to grief.

Sugar Cards for Canadian Wholesalers.

A new Canadian regulation placing all wholesale grocers under a card-rationing system became effective October 15, by which sugar supplies are apportioned to the different wholesalers. This, it is thought, will assure a more equitable distribution of sugar and will prevent any tendency on the part of the wholesaler to permit any merchant to buy in quantities greater than the normal requirements. While no definite action has yet been taken, it is probable that the retailer will also be placed on a card-rationing system.

Whether the consumer will be required to use a sugar card is a matter that is yet undecided, but it is known that the Canada Food Board is seriously considering such a move.

Increase in Price of Food in France.

An inquiry has been instituted by the Minister of Labor as to the price of articles of food from the third quarter of 1914 to the end of the second quarter of 1918 in towns having more than 10,000 inhabitants.

To draw up these statistics the price of a fixed weight of the 13 chief articles of household use was taken according to their relative importance in ordinary consumption. The weights are those which are admitted by specialists in these questions to represent the quantity consumed in a year by a household of four persons of the laboring class living in Paris. They are: Bread, 1,540 pounds; meat, 440 pounds; bacon, 44 pounds; butter, 44 pounds; eggs, 240; milk, 66 gallons; cheese, 44 pounds; potatoes, 550 pounds; beans, 66 pounds; sugar, 44 pounds; oil, 22 pounds; petroleum, 52 pints; methylated spirit, 17 1/2 pints. The current prices of these articles at different periods have been calculated from information supplied by the mayors of various places and the total taken.

The average results for the whole of France are given in the following table:

Period.	Francs.	Period.	Francs.
1911:		1916—Continued.	
1st quarter	1,014	3d quarter	1,420
1913:		4th quarter	1,466
1st quarter	1,020	1917:	
1914:		1st quarter	1,547
3d quarter	1,004	2d quarter	1,717
1915:		3d quarter	1,845
1st quarter	1,105	4th quarter	2,008
3d quarter	1,235	1918:	
1916:		1st quarter	2,120
1st quarter	1,336	2d quarter	2,331
2d quarter	1,379		

From 1914, when food prices were lower than they were in 1911 and 1913, each quarter of each succeeding year shows an increase.

Ocean Salt Extracted by Electricity in Norway.

Experiments in Norway with a view to extracting salt from ocean water by means of electricity have been successful and two salt factories will be started for this purpose in the near future, by the name of De Norske Saltverker. One is to be in western and the other in northern Norway, as these districts, on account of the fisheries, are the best home markets. Each factory is calculated to produce \$50,000 tons of salt per year for a start, but they will be so built that the production can be brought up to double the quantity, if necessary. Besides the salt, different by-products will be made. The capital for the two factories is calculated at 20,000,000 crowns (\$5,360,000). Each of them will take about 6,500 horsepower for the normal production. During the war it has been difficult to get salt from abroad and sometimes it has been impossible to salt down the fish. The new salt works should greatly improve the situation.

Notices of Judgment Under the Food and Drugs Act

(Continued from the preceding issue.)

5618. Adulteration and misbranding of "Baldwin's Cayuga Natural Medicated Spring Water."

An article labeled as above was held to be adulterated because of filth and contamination, and misbranded because of the false claim that it was a cure for Bright's disease, diabetes, liver complaint, and disorders of the stomach, and because the quantity of the contents was not indicated.

5619. Misbranding of "Phuton Kidney Remedy."

An article labeled as above, consisting largely of water with about 3.5 per cent alcohol and 3.65 grains solids per 100 cc., consisting largely of plant extractive; also a small amount of ammonium chlorid, salicylic and tannic acids, oils of sassafras and wintergreen, was held to be misbranded because of the false claim that it was a cure for all kidney and bladder diseases. On September 25, 1916, the defendant plead guilty and was fined \$5.00 and costs.

5620. Adulteration and misbranding of tablets acid acetylo salicylic.

Adulteration and misbranding was alleged because of the false statement on the label, "Acid Acetylo-Salicylic," as the tablets contained little or no aspirin but showed the presence of acetanilid. On December 11, 1916, no claimant having appeared, the product was destroyed.

5621. Adulteration of tomato pulp.

Substantially the same as No. 5533.

5622. Adulteration of a compounded physician's prescription and tincture of iodine.

Adulteration of the compounded article was held because it contained 53.28 grains of phenacetin and 46.32 grains of salol in twelve powders, whereas the prescription called for 60 grains of each in twelve powders. Tincture of iodine was held to be adulterated because the Pharmacopoeia calls for not less than 5 grams of potassium iodid and not more than 6.86 grams of iodine, per 100 cc., whereas the article contained 7.98 grams potassium iodid and 4 grams iodine, per 100 cc. On July 17, 1916, the defendant plead guilty and was fined \$20.*

5623. Adulteration of milk.

Decomposition was held to constitute adulteration and upon this charge the defendant was convicted and fined \$25.00 and costs. At the same time, he was acquitted of the charge of adding water to the milk.

5624. Adulteration and misbranding of tomatoes.

A product labeled "Queen Esther Brand Tomatoes" was held to be adulterated and misbranded because of added water. On February 21, 1916, claimant having admitted the allegations, the product was delivered to him upon payment of costs and under \$1,200 bond, conditioned upon relabeling under proper supervision.

5625. Adulteration of tomatoes.

Substantially the same as No. 5533.

5626. Misbranding of "Byrnes Baby Relief."

An article labeled as above was held to be misbranded because of the false claim that it was a safe medicine for wind colic, sour stomach, nervousness, crying, sleepless and fretful babies. On December 16, 1916, claimant was ordered to pay costs, and the product was destroyed.

Notices of Judgment.

5627. Adulteration of sardines.

Decomposed sardines were held to be adulterated. On June 8, 1916, claimant having consented, the product was examined under proper supervision, the unfit destroyed and the good portion delivered to him upon payment of costs.

5628. Adulteration of "Mexican Chile Peppers."

Decomposition was held to constitute adulteration. On March 17, 1916, no claimant having appeared, the product was destroyed.

5629. Misbranding of "Hamby's Genuine Dawson Springs Water Concentrated."

An article labeled as above was held to be misbranded because of the false claim that it was a cure for dropsy, Bright's disease, rheumatism, gall stones, and all blood diseases; also for the further reason that the statements on the label of the substances and ingredients contained therein were false and misleading. On November 27, 1916, the defendants pled guilty and were fined \$50.

5630. Adulteration of oysters.

Added water was held to constitute adulteration. On

July 11, 1916, the defendant pled guilty to two of the charges and was fined \$20, and the other charge was dismissed.

5631. Adulteration of oysters.

Substantially the same as No. 5630. Fine, \$30.

5632. Misbranding of glucose preserves.

An article labeled, "Net Weight Contents 13½ ozs." was held to be misbranded because of short weight. On October 10, 1916, the defendants pled guilty and were fined \$15.

5633. Adulteration and misbranding of oats.

The presence of barley in a shipment labeled "Oats" was held to constitute adulteration and misbranding. On October 24, 1916, the defendant was found guilty and the product was forfeited.

5634. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranty of "protein not less than 41.0 per cent, and fiber not more than 12.0 per cent," was not substantially by analysis, which showed protein 36.7 per cent and fiber 14.4 per cent. On April 27, 1917, the defendants pled guilty and were fined \$100 and costs.

5635.—Misbranding of "Humphreys' Pile Ointment Witch Hazel Oil (Compound)."

An article labeled as above, shown by analysis to be essentially a camphor ointment on a lard base, was held to be misbranded because of the false claim that it was a cure for piles, cancer, rheumatic swellings and burns. On February 21, 1917, the defendants pled guilty and were fined \$25.

5636. Adulteration and misbranding of vinegar.

An article labeled "Cider Vinegar" but containing distilled vinegar or dilute acetic acid was held to be both adulterated and misbranded. On June 30, 1917, the product was released to claimants under \$200 bond and upon payment of costs, conditioned that the article should be properly labeled.

5637. Adulteration of ketchup.

Adulteration was alleged because of filth and decomposition. On June 28, 1917, claimant having consented, the product was ordered destroyed and the bottles and cases be returned to him, upon payment of costs.

5638. Adulteration of pork and beans.

Substantially the same as No. 5540; bond, \$1,500.

5639. Misbranding of "Giles' Germicide."

An article labeled as above, containing chiefly linseed oil, ether and camphor was held to be misbranded because of the false claim that it was a cure for rheumatism, asthma, pneumonia and diphtheria. On June 29, 1917, the defendants pled guilty and were fined \$50.

5640. Adulteration and misbranding of oats.

Substantially the same as No. 5633. Defendants pled guilty and were fined \$25 and costs.

5641. Misbranding of confectionery.

Candy labeled "Creamed Marbles—Ice Cream Drops and Hardies' Highland Chocolates" was held to be misbranded because analyses of the coatings on these products showed that they contained cocoa shells or dust and a fat or fats foreign to chocolate. On June 4, 1917, the defendants pled nolo contendere and were fined \$10 and costs.

5642. Adulteration of luncheon beans.

Beans which had been colored, coated and stained to conceal inferiority and decomposition were held to be adulterated. On July 11, 1917, no claimant having appeared, the product was destroyed.

5643. Adulteration of beans.

Decomposed beans were held to be adulterated. On April 26, 1917, no claimant having appeared, the product was destroyed.

5644. Adulteration of oranges.

Immature oranges which had been sweated to color them so as to simulate mature fruit were held to be adulterated. On January 18, 1916, no claimant having appeared, the product was destroyed.

5645. Adulteration of pork and beans.

Substantially the same as No. 5540.

5646. Misbranding of "Kopp's Kidney Pills," "Kopp's," and "Kopp's Baby's Friend."

An article labeled "Kopp's Kidney Pills," containing

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chiefly methylene blue, juniper, and unidentified matter, was held to be misbranded because of the false claim that it was a cure for all diseases due to disordered kidneys and bladder. An article labeled "Kopp's," being a sirup containing alcohol, morphine and aromatics, was held to be misbranded because of the false claim that it was a remedy for diarrhea, cholera infantum, teething troubles and colic. An article labeled "Kopp's Baby's Friend," a sirupy mixture containing alcohol, morphine and aromatic substances, was held to be misbranded because of the false claim that it was a remedy for cholera infantum, teething troubles, diarrhea and wind colic; also for the further reason that it contained a poisonous and deleterious ingredient. On October 18, 1916, defendants pled guilty and were fined \$25 and costs.

5647. Misbranding of "Reuter's Sirup."

An article labeled as above, being essentially a hydro-alcoholic solution of sugar, aromatics and a cathartic drug containing emodin, was held to be misbranded because of the false claim that it was a cure for rheumatism, syphilis, gangrene, catarrh and malarial fever. On September 4, 1917, the defendants pled guilty and were fined \$100.

5648. Adulteration and misbranding of cognac brandy.

An article labeled above, consisting largely of neutral spirits artificially colored with caramel, was held to be adulterated and misbranded. On August 6, 1917, the defendants pled guilty and were fined \$50.

5649. Adulteration and misbranding of cognac brandy.

A domestic product consisting principally of dilute neutral spirits, flavored with a small amount of brandy, was held to be adulterated, and misbranding was alleged because of the false and misleading statements on the label conveying the impression that it was an imported article produced in the Cognac District of France, and also because the amount of the contents was not conspicuously marked on the outside of the package. On August 6, 1917, the defendants pled guilty and were fined \$50.

5650. Adulteration and misbranding of vinegar.

A product labeled "Cider Vinegar," shown to contain distilled vinegar or dilute acetic acid, was held to be adulterated and misbranded. A product labeled "Sugar Cane Vinegar," containing distilled vinegar or dilute acetic acid, was held to be adulterated and misbranded. On November 11, 1916, the defendant pled guilty and was fined \$40 and costs.

5651. Adulteration and misbranding of vinegar.

A product labeled "Pure Apple Cider Vinegar" but containing distilled vinegar or dilute acetic acid was held to be adulterated and misbranded. On January 27, 1917, claimants having admitted the allegations, the product was released to them under \$1,000 bond, in conformity with section 10 of the act.

5652. Adulteration and misbranding of purified wool fat.

A product labeled as above, containing 50 per cent petroleum products, and differing from the U. S. Pharmacopeia standard of strength, quality and purity, was held to be adulterated and misbranded. On July 27, 1916, claimants having admitted the allegations and consenting, the product was released to them upon payment of costs and under \$500 bond, in conformity with section 10 of the act.

5653. Adulteration of tomato puree.

Decomposition was held to constitute adulteration. On July 26, 1917, no claimant having appeared, the product was destroyed.

5654. Adulteration and misbranding of vinegar.

Substantially the same as No. 5651; defendants pled guilty and were fined \$100 and costs.

5655. Misbranding of "Stuart's Calcium Wafer Compound."

An article labeled as above, containing strychnine, was held to be misbranded because of the false claim that it was a harmless cure for constipation, humor, liver troubles, and all blood troubles and skin diseases. On August 8, 1916, no claimant having appeared, the product was destroyed.

5656. Adulteration of scallops.

Added water was held to constitute adulteration. On August 10, 1917, the defendant pled nolo contendere and was fined \$10.

5657. Adulteration and misbranding of vinegar.

Substantially the same as No. 5651; claimant having consented, the product was delivered to him upon payment of costs and under bond, in conformity with section 10 of the act.

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5658. Adulteration and misbranding of black pepper.

Substantially the same as No. 5547; the product was destroyed.

5659. Misbranding of "Sloan's Liniment."

A preparation labeled as above, found to contain essentially turpentine, a light oil similar to kerosene or coal oil, oil of sassafras, oleo resin of capsicum, with indications of the presence of pine oil, was held to be misbranded because of the false claim that it was a cure for rheumatism, sciatica, pleurisy, tonsilitis and tapeworm. On December 22, 1916, the defendants pled nolo contendere and were fined \$50.

5660. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranty of "protein not less than 41.0 per cent, crude fiber not more than 10.0 per cent," was not substantiated by analysis, which showed 38 per cent protein and 12.4 per cent crude fiber. On March 12, 1917, the defendant pled guilty and was fined \$25.

*This notice of judgment is not clear, although correctly abstracted. According to the current Pharmacopoeia, tincture of iodine must contain to each 100 cc., not less than 6.5 grams, nor more than 7.5 grams of iodine, and not less than 4.5 grams, nor more than 5.5 grams of potassium iodide. It is evident that the article was illegal according to present standards, despite the evident miswording of the judgment as reported.

5661. Misbranding of "Dr. O. Phelps Brown's Celebrated Herbal Ointment."

An article labeled as above, shown to be a mixture of petrolatum and salicylic acid, was held to be misbranded because of the false claims that it was a cure for neuralgia, glandular swellings, sore throat, pleurisy, tumors, spinal diseases and all diseases of the skin. On August 1, 1917, the defendants pled guilty and were fined \$50.

5662. Adulteration and misbranding of vanilla extract.

A product labeled as above, composed in part of alcohol, water, sugar, coloring matter and vanillin, which had been substituted for pure extract of vanilla bean, was held to be adulterated, and misbranded because of the false label, to-wit, "Pure Extract Vanilla Bean." On March 12, 1917, the defendants pled nolo contendere and were fined \$5.

5663. Misbranding of "Pastillas del Dr. Becker para los rinones y vejiga."

A product labeled as above (Dr. Becker's tablets for the kidneys and bladder), consisting of purple sugar-coated pills, containing essentially potassium nitrate, oil of turpentine or rosin, a gum, a trace of an unidentified alkaloid, and aromatics, was held to be misbranded because of the false claim that it was a cure for diseases of the kidneys and bladder; also rheumatism and dropsy. On November 28, 1916, the defendant pled guilty and was fined \$25.

5664. Adulteration and misbranding of "Bannerman's Intravenous Solution."

An article labeled as above was held to be both adulterated and misbranded because of the false and misleading statement of the contents on the label which was not substantiated by chemical analysis, and because its strength and purity fell below the professed standard or quality under which it was sold. On July 2, 1917, the defendant pled guilty and was fined \$25 and costs.

5665. Adulteration of tomato catsup.

Adulteration was held because it consisted wholly of a decomposed, putrid, and filthy vegetable substance. On September 27, 1916, no claimant having appeared, the product was destroyed.

5666. Adulteration of milk.

Adulteration was held because butter fat had been in part abstracted. On April 3, 1917, the defendant pled guilty and was fined \$25 and costs.

5667. Adulteration of eggs.

Adulteration was held because of filth and decomposition. On September 24, 1917, the defendants pled guilty and were fined \$100.

5668. Adulteration of eggs.

Substantially the same as No. 5667.

5669.—Adulteration and misbranding of tomato paste.

Adulteration was alleged because of filth and decomposition, and misbranding because the contents were not conspicuously marked on the outside of the package. On November 29, 1916, the defendants pled guilty and were fined \$25.

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You don't know how good Margarine is until you have tried Moxley's. Be fair to yourself and try it with your next meal.

Churned by **Wm. J. Moxley** Chicago
INCORPORATED

5670. Misbranding of "Garfield Tea."

A product labeled as above, shown to consist essentially of senna leaf and triticum, a small amount of malva flowers and fruits, and mint stems; also traces of unidentified plant tissue and a small amount of a substance resembling manna, was held to be misbranded because of the false claim that it was a cure for piles, rheumatism, dropsy, cancer, blood and kidney diseases, and for all cases of female troubles. On January 13, 1917, the defendants pled guilty and were fined \$25.

5671. Adulteration of mineral water.

Adulteration was held because of filth and decomposition. On September 18, 1916, claimants having consented, the product was emptied under proper supervision and the containers returned to them, and the claimants paid the costs of the proceedings.

5672. Adulteration of oysters.

Added water was held to constitute adulteration. On July 27, 1917, the defendants pled guilty and were fined \$5.

5673. Adulteration of oysters.

Substantially the same as No. 5672.

5674.—Adulteration of oysters.

Substantially the same as No. 5672.

5675. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "protein 38.62 to 41.00 per cent * * * fiber 10.00 per cent," was not substantiated by laboratory analysis, which showed, protein 35.60 (or 35.6) per cent and 12.7 (or 13.00) per cent of fiber. On May 14, 1917, the defendants pled guilty and were fined \$25 and costs.

5676. Adulteration and misbranding of "California Brandy."

A product labeled as above was held to be adulterated and misbranded because neutral spirits had been substituted for brandy, and it was shown to have been artificially colored. On March 9, 1917, the defendants pled guilty and were fined \$25.

5677. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "Ammonia 7.50 per cent, Nitrogen 6.18 per cent, * * * Protein 38.62 per cent, * * * Fibre 10.00 per cent" was not substantiated by laboratory analysis, which showed, ammonia, 6.02 per cent; nitrogen, 4.96 per cent; protein, 31.01 per cent, and crude fiber, 16.72 per cent. On September 17, 1917, the defendant pled nolo contendere and was fined \$25.

5678. Adulteration and misbranding of vinegar.

An article labeled as pure apple cider vinegar but containing distilled vinegar or dilute acetic acid, and artificial coloring matter, was held to be adulterated and misbranded. On April 5, 1917, no claimant having appeared, the product was destroyed.

5979. Misbranding of "Floto's Essence Coffee."

A product labeled as above, shown to be a mixture of roasted cereal and sugar or molasses, was held to be misbranded. On June 25, 1917, the defendant pled guilty and was fined \$10.

5680. Adulteration of oysters.

Substantially the same as No. 5672. Fine, \$40.

5681. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "Protein 41.0 per cent" was not substantiated by laboratory analysis, which showed 36.9 per cent protein. On March 12, 1917, the defendants pled guilty and were fined \$50.

5682. Misbranding of cottonseed meal and cake.

Misbranding was alleged because the guaranteed analysis of "Ammonia 8 to 8½ per cent, protein 41 to 43 per cent, nitrogen 6½ to 8 per cent," was not substantiated by laboratory analysis, which showed nitrogen 5.88 per cent, ammonia 7.14 per cent, protein 36.76 per cent. On March 19, 1917, the defendants pled guilty and were fined \$50 and costs.

5683. Misbranding of honey.

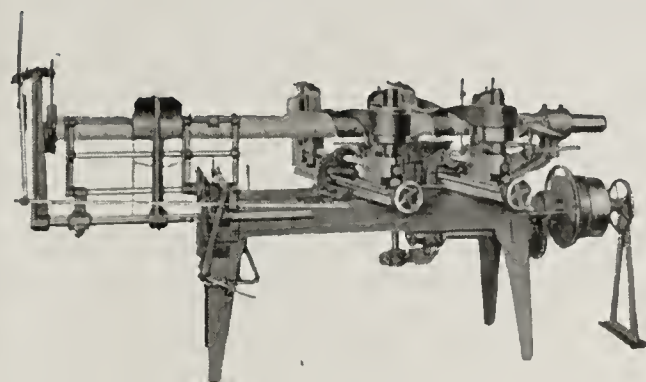
Misbranding was alleged because the quantity of the contents was not conspicuously marked on the outside of the package. On February 28, 1917, the defendants pled nolo contendere and were fined \$25.

5684. Misbranding of "Cummings Blood Remedy."

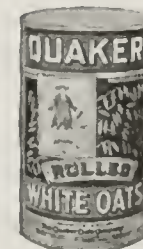
An article labeled as above was held to be misbranded because of the false claim that it was a cure for consumption, catarrh, heart disease and syphilis. On June 20, 1917, the defendant pled guilty and was fined \$50.

5685. Adulteration of Crazy well water and Natural Gibson well water.

Adulteration was held because of filth and decomposition.



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tion. On December 9, 1916, no claimant having appeared, the product was destroyed.

5686. Adulteration of horse beans.

Filth and decomposition was held to constitute adulteration. On December 4, 1916, claimants having consented, the product was released to them upon payment of costs of proceedings and under \$8,000 bond, conditioned that the product be examined under proper supervision and the unfit portion destroyed.

5687. Adulteration and misbranding of vinegar.

Substantially the same as No. 5678.

5688. Misbranding of cottonseed meal.

Misbranding was held because the guaranteed analysis of "protein 38.55 to 41 per cent" was not substantiated by laboratory analysis, which showed 37.3 per cent. On June 4, 1917, the defendants pled guilty and were fined \$10.

5689. Adulteration and misbranding of vinegar.

Substantially the same as No. 5678.

5690. Misbranding of cottonseed meal and feed meal.

Misbranding of the cottonseed meal was alleged because the guaranteed analysis of "protein more than 38.62 per cent" was not substantiated by laboratory analysis, which showed 36.7 per cent. Misbranding of the feed meal was alleged because the guaranteed analysis of "protein 21 per cent, fat 5 per cent" was not substantiated by laboratory analysis, which showed protein 17.6 per cent and fat 2.84 per cent. On November 23, 1916, the defendants pled guilty and were fined \$25 and costs.

5691. Adulteration and misbranding of vinegar.

Substantially the same as No. 5678.

5692. Adulteration and misbranding of poultry food.

A product labeled as above but found to contain the addition of sand, was held to be adulterated and misbranded. On December 30, 1916, the defendant pled guilty and was fined \$6 and costs.

5693. Misbranding of cottonseed meal and cake.

Misbranding was alleged because the guaranteed analysis of "ammonia, 8 to 8½ per cent; protein, 41 to 43 per cent; nitrogen, 6½ to 8 per cent, and fiber, 8 to 10 per cent," was not substantiated by laboratory analysis, which showed ammonia 7.38 per cent; protein, 37.9 per cent; nitrogen, 6.07 per cent, and fiber 11.6 per cent. On May

14, 1917, the defendants pled guilty and were fined \$25 and costs.

5694. Adulteration of tomato paste.

Substantially the same as No. 5669. Judgment was entered against claimant for costs of the proceedings.

5695. Adulteration of cottonseed meal.

Adulteration was alleged because analysis showed in two samples, Crude fiber, 15.20 per cent, 15.12 per cent; Protein, 35.60 per cent and 33.75 per cent; Nitrogen, 5.70 per cent and 5.40 per cent; and Ammonia, 6.93 per cent and 6.55 per cent, whereas the label declared it contained "not more than 10 per cent fiber, 41 per cent protein, 6.5 per cent nitrogen, and not less than 8 per cent ammonia." The third sample was declared to contain not less than "8 per cent ammonia, 41 per cent protein, 6 per cent fat, 6.5 per cent nitrogen, and not more than 10 per cent fiber," whereas analysis of the sample showed the following: 6.44 per cent ammonia, 33.20 per cent protein, 5.31 nitrogen, 5.15 per cent fat (ether extract), and 15.14 per cent crude fiber. On April 16, 1917, the defendants pled guilty and were fined \$50 and costs.

5696. Misbranding of cottonseed meal and cottonseed cake.

Misbranding of the cottonseed meal and cottonseed cake was alleged because the guaranteed analysis of "Protein 41 per cent, Fiber, maximum, 10 per cent," was not substantiated by laboratory analysis, which showed the cottonseed meal contained 11.43 per cent crude fiber and 38.94 per cent protein; the cottonseed cake, 11.85 per cent crude fiber and 38.50 per cent protein. On February 27, 1917, the defendants pled guilty and were fined \$50.

5697. Adulteration of canned cherries.

Adulteration was held because of decomposition and because the article consisted largely of swelled and leaking cans. On November 14, 1916, claimants having consented, the good portion was released to them upon payment of the costs of the proceedings and the unfit portion was destroyed.

5698. Misbranding of cottonseed meal and cake.

Misbranding was alleged because the guaranteed analysis of "Fiber (maximum), 8 to 10 per cent, Protein 41 to 43 per cent, Ammonia 8 to 8½ per cent, Nitrogen 6½ to 8 per cent," was not substantiated by laboratory analysis.

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which showed, fiber 7.14 per cent, protein 37.8 per cent, ammonia 7.34 per cent, nitrogen 6.05 per cent, and ether extract 7.14 per cent. On April 24, 1917, the defendants pled guilty and were fined \$50 and costs.

5699. Misbranding of cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "Ammonia 8 per cent, nitrogen 6.5 per cent, protein 41 to 45 per cent, crude fat 8 per cent, crude fiber (maximum) 9 per cent," was not substantiated by laboratory analysis, which showed, ammonia 7.76 per cent, nitrogen 6.38 per cent, protein 39.9 per cent, crude fat 6.7 per cent, and crude fiber 11.8 per cent. On January 23, 1917, the defendants pled nolo contendere and were fined \$50 and costs.

5700. Adulteration of grapefruit.

Grapefruit which had been colored to conceal inferiority was held to be adulterated. On November 6, 1917, the defendant pled guilty and was fined \$25 and costs.

5701. Misbranding of "Hills Honey and Tar Compound."

An article labeled as above was held to be misbranded because of the false claim that it was a cure for asthma, catarrh, croup and headaches. Analysis of the product showed it to consist essentially of water, alcohol, sugars, menthol, thymol and a small amount of a substance similar to oil of tar. On February 13, 1917, the defendant pled guilty and was fined \$25.

5702. Misbranding of "Homenta."

A dark-colored liquid with a small amount of oil floating on top or emulsified in the liquid, labeled as above, shown to consist essentially of menthol, thymol, ammonia, sugar, water and alcohol, was held to be misbranded because of the false claim that it was a cure for asthma, hay fever, tonsillitis, grippe, measles, neuralgia, tuberculosis and headaches. On February 13, 1917, the defendant pled guilty and was fined \$25.

5703. Misbranding of "Di-Col-Q."

An article labeled as above, shown to consist essentially of pine oil, chloroform, mineral oil and green dye, was held to be misbranded because of the false claim that it was a cure for rheumatism, croup, cholera, eruptions, cholera and roup in poultry, in all cases of colic in horses, mules and cattle, for hog cholera, and piles and kidney disease. On February 13, 1917, the defendant pled guilty and was fined \$25.

5704. Adulteration of tomatoes.

Added water was held to constitute adulteration. On November 21, 1916, claimants having consented, the product was released to them upon payment of costs of the proceedings and under \$500 bond.

5705. Adulteration of condensed milk.

Decomposition was held to constitute adulteration. On November 10, 1916, claimants were obliged to pay the costs of the proceedings and the product was destroyed.

5706. Adulteration and misbranding of olive oil.

A product labeled, "Finest Quality Olive Oil," was held to be adulterated and misbranded because cottonseed oil had been mixed with it and substituted for olive oil. It also failed to bear a statement on the label of the quantity of the contents. On August 24, 1917, the product was released to claimants upon payment of the costs of the proceedings and under \$500 bond.

5707. Misbranding of macaroni.

Macaroni of domestic manufacture was held to be misbranded because of being so labeled and branded as to give the impression that it was an imported product. On August 7, 1917, no claimant having appeared, the product was destroyed by the U. S. marshal.

5708. Adulteration and misbranding of sweet milk chocolate, sweet real milk chocolate, and cocoa, and adulteration of chocolate liquor.

A product labeled, "Sweet Milk Chocolate," was held to be adulterated and misbranded because it was in reality a sweet chocolate, which contained added butter fat and only a trace of sweet milk chocolate. A product labeled "Sweet Real Milk Chocolate" was held to be adulterated and misbranded because it was but a sweet chocolate and contained little or no milk. The product labeled "Chocolate Liquor" was held to be adulterated and misbranded because of the addition and substitution of cacao shells. The presence of cacao shells, which had been substituted for cocoa, in a product labeled "Cocoa," was held to constitute adulteration and misbranding. On July 9, 1917, the defendants pled nolo contendere and were fined \$100.

5709. Adulteration and misbranding of water.

Filth and decomposition was held to constitute adulteration, and misbranding was alleged because the quantity of

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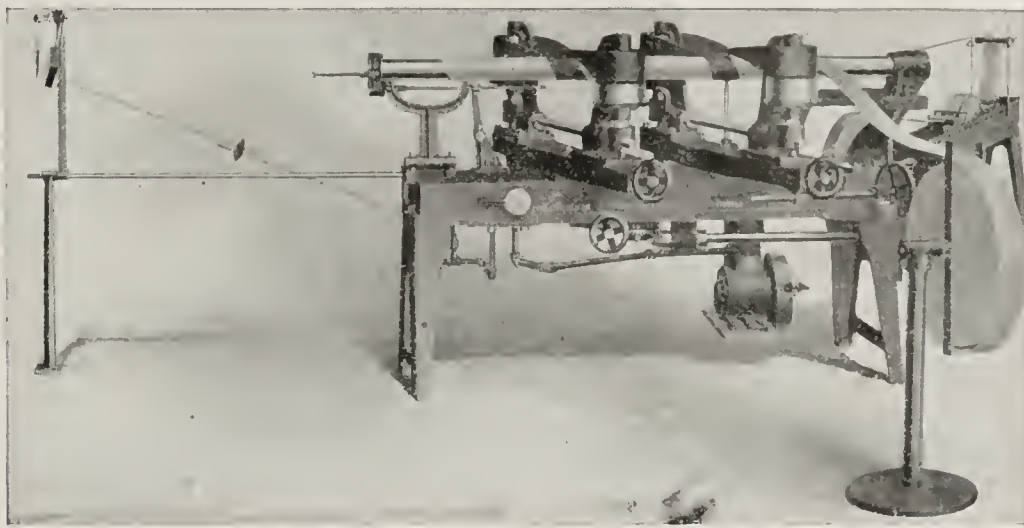
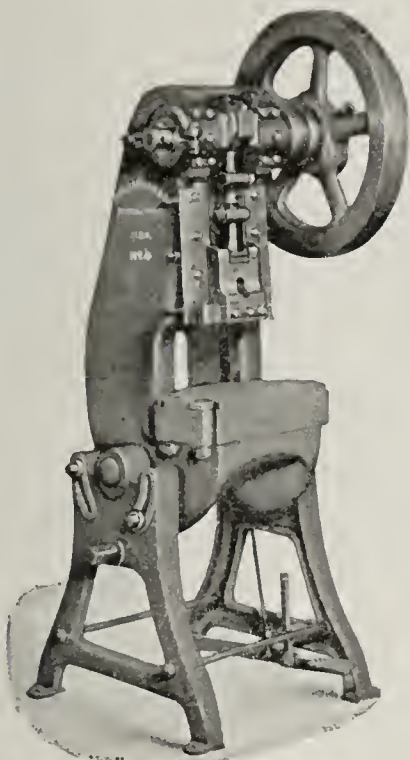
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the contents was not stated on the outside of the package. On December 23, 1916, no claimant having appeared, the product was destroyed.

5710. Misbranding of "Dr. Martel's Female Pills."

An article labeled as above, being white tablets and black pills, shown to contain .0009 grams of total alkaloids per tablet and .0003 grams alkaloid per pill, a trace of caffeine and strychnine, and also showed the presence of aloes, licorice, and ferrous and ferric sulphates, was held to be misbranded because of the false claim that it was a cure for amenorrhea, dysmenorrhea, and for the nervous and mental disturbances of the menopause, which include hysteria, melancholia, moroseness, and despondency. On July 10, 1917, the defendant pled guilty and was fined \$5.

5711. Misbranding of "Dr. Martel's Special Female Pills."

An article labeled as above, consisting of brown pills, coated with iron oxid, sugar, and calcium carbonate, and containing essentially aloes, ferrous sulphate, and an unidentified alkaloid, also indications of ginger, was held to be misbranded because of the false claim that it was a remedy for disturbances of the menstrual functions, and for amenorrhea and menorrhagia. On July 10, 1917, the defendant pled guilty and was fined \$5.

5712. Misbranding of "Dr. Martel's Female Pills."

An article labeled as above, consisting of black pills, gelatin coated, and containing essentially aloes, ferrous sulphate, and an unidentified alkaloid, and with indications of ginger, was held to be misbranded because of the false claim that it was a remedy for dysmenorrhea and amenorrhea. On July 10, 1917, the defendant pled guilty and was fined \$5.

5713. Adulteration of evaporated apples.

Adulteration was held because of excessive moisture. On December 5, 1916, claimant having consented, the product was delivered to him upon payment of the costs of the proceedings and under \$2,500 bond.

5714. Misbranding of macaroni.

Macaroni of domestic manufacture was held to be misbranded because of being so labeled as to give the impression of being of foreign manufacture. On August 24,

1917, the product was delivered to the claimants upon payment of the costs of the proceedings and under \$500 bond.

5715. Adulteration and misbranding of evaporated apples.

Adulteration was held because of decomposition and excessive moisture, and misbranding because the package failed to bear a statement of the quantity of the product contained therein. On December 13, 1916, it was ordered that such portion of the apples as were found, under proper supervision, to be susceptible to treatment, so as to make them fit for food, should be released to claimant upon payment of the costs of the proceedings, and under \$1,000 bonds, and the balance destroyed.

5716. Adulteration of tomatoes.

Substantially the same as No. 5704, excepting that the product was released under \$500 bond, conditioned upon proper labeling.

5717. Adulteration and misbranding of oranges.

Frozen oranges which had been labeled as consisting of fancy seedless oranges were held to be adulterated and misbranded because of partial decomposition. On December 21, 1916, claimants having admitted the allegations, the product was released to them under bond, in conformity with section 10 of the act.

5718. Adulteration of tomatoes.

Substantially the same as No. 5704.

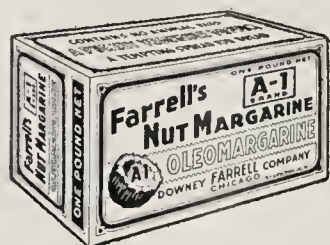
5719.—Adulteration and misbranding of vinegar.

An article labeled "Apple Cider Vinegar" was held to be adulterated and misbranded because of added water. On January 13, 1917, the product was released to claimants under \$500 bond, in conformity with section 10 of the act, and they were ordered to pay the costs of the proceedings.

5720.—Adulteration and misbranding of vinegar.

An article labeled "Pure Apple Vinegar" was held to be adulterated and misbranded because it contained distilled vinegar or diluted acetic acid, which had been substituted for pure apple vinegar. On March 9, 1917, claimant having admitted the allegations, the product was released to him upon payment of the costs of the proceedings and under \$1,000 bond, conditioned in part that it should be labeled "Imitation Cider Vinegar."

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- Have a butter flavor.
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5721. Adulteration and misbranding of beans.

An article labeled "Norman Brand Baker Beans with tomato sauce" was held to be adulterated because of decomposition, and misbranded because the beans had been cooked by some other process other than that of baking. On February 15, 1917, no claimant having appeared, the product was destroyed.

5722. Adulteration of eggs.

Adulteration was alleged because the article consisted in part of filthy, putrid and decomposed matter. On October 17, 1916, no claimant having appeared, the product was sorted under proper supervision, the good portion sold at auction and the remainder destroyed.

5723. Adulteration and misbranding of frozen eggs.

Adulteration was alleged because of filth and decomposition, and misbranding because the package failed to bear a statement of the quantity of the contents contained therein. On September 7, 1917, no claimant having appeared, the product was destroyed.

5724. Adulteration of eggs.

Inedible and decomposed eggs were held to be adulterated. On May 7, 1917, the defendant pleaded guilty and was fined \$10.

5725. Adulteration of tomatoes.

Substantially the same as No. 5704; bond, \$1,000.

5726. Misbranding of "Dr. Martel's Special Female Pills."

An article labeled as above, shown to contain ash, aloes, methylene blue, oil of juniper, oil of savin, oil of pennyroyal, ferrous carbonate and ferrous and ferric sulphate, was held to be misbranded because of the false claim that it was a cure for menorrhagia and amenorrhea and profuse menstruation. On July 10, 1917, the defendant pleaded guilty and was fined \$5.

5727. Adulteration of milk.

Added water, filth and decomposition was held to constitute adulteration. On August 30, 1917, the defendants pleaded nolo contendere and were fined \$25 and costs.

5728. Adulteration of pork and beans.

Filth and decomposition was held to constitute adulteration. On April 3, 1917, no claimant having appeared, the product was sold by the U. S. marshal under \$500 bond, conditioned that the product would not be sold for human food.

5729.—Misbranding of cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of "protein 38.62 to 43 per cent" was not substantiated by laboratory analysis, which showed Protein, 36.6 per cent. On April 27, 1917, the defendants pled guilty and were fined \$50 and costs.

5730.—Adulteration of rolled oats.

Adulteration was held because the article consisted of a filthy, decomposed and putrid vegetable substance. On February 15, 1917, no claimant having appeared, the product was destroyed.

5731. Adulteration of shell eggs.

Filth and decomposition was held to constitute adulteration. On April 24, 1917, the defendant pled guilty and was fined \$25 and costs.

5732. Adulteration of shell eggs.

Substantially the same as No. 5731. Fine, \$10.

5733. Adulteration of shell eggs.

Adulteration was held because of filth and decomposition. Examination of three cases, each containing 180 eggs, showed 401 eggs, or 74.3 per cent, to be inedible and in an extreme state of decomposition. On June 29, 1917, the defendant pled guilty and was fined \$200.

5734. Adulteration of shell eggs.

Eggs which in a case of 360 showed 64, or 17.8 per cent, to be inedible and partly decomposed, were held to be adulterated. On April 2, 1917, the defendant pled guilty and was fined \$25 and costs.

5735. Adulteration of shell eggs.

Eggs which in a case of 1,800 showed 180, or 10 per cent, to be inedible and decomposed, were held to be adulterated. On May 7, 1917, the defendants pled guilty and were fined \$10 and costs.

5736. Adulteration of shell eggs.

Eggs, which in three cases containing 1,080 eggs, showed 393, or 36.4 per cent, to be inedible and decomposed, were held to be adulterated. On July 14, 1917, the defendant pled guilty and was fined \$10.

5737. Adulteration of shell eggs.

Filthy and decomposed eggs were held to be adulterated. Examination showed, in three cases, containing 1,080 eggs, 183, or 17.4 per cent, to be inedible and decomposed. On March 29, 1917, the defendant pled guilty and was fined \$25.

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No longer is there resistance towards the new product to eat or to cook with, when honestly made and properly labeled, for the public has come

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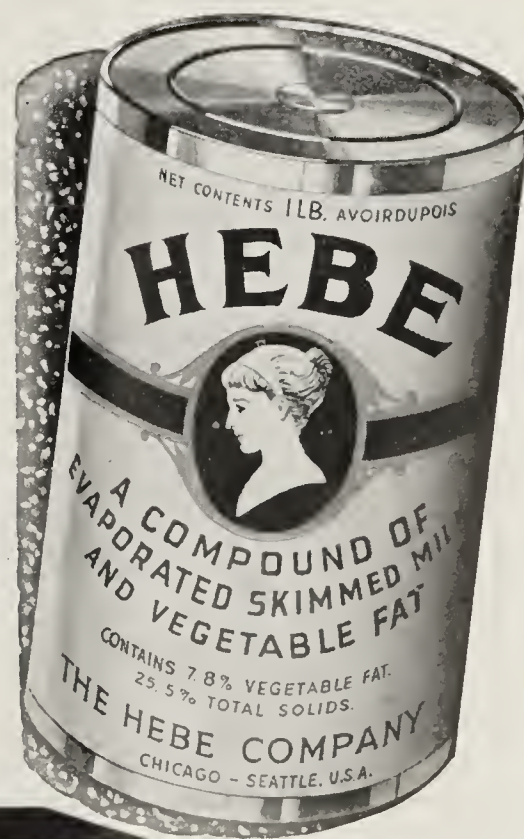
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5738. Adulteration of shell eggs.

Eggs, which in 17 cases, containing 6,120 eggs, showed 2,088 eggs, or 34.1 per cent, to be inedible and decomposed, were held to be adulterated. On March 29, 1917, the defendants pled guilty and were fined \$50.

5739. Adulteration of shell eggs.

Eggs were held to be adulterated because examination of 354 eggs showed 97, or 27.4 per cent, to be inedible and decomposed. On May 7, 1917, the defendants pled guilty and were fined \$10 and costs.

5740. Adulteration of shell eggs.

Eggs, which upon examination of six cases, containing 2,160 eggs, showed 227 eggs, or 10.5 per cent, to be inedible and decomposed, were held to be adulterated. On June 12, 1917, the defendant pled guilty and was fined \$25 and costs.

5741. Adulteration of shell eggs.

Adulteration was held because examination of four cases, containing 684 eggs, showed 109 eggs, or 15.9%, to be inedible and decomposed. On March 22, 1917, the defendant pled guilty and was fined \$50.

5742. Adulteration and misbranding of "Tablets Heroin Hydrochloride 1/6 Gr."

Adulteration and misbranding of an article labeled as above was held because analysis showed it to contain .118 grain heroin hydrochlorid per tablet instead of 1/6 of a grain. On March 27, 1917, the defendants pled guilty and were fined \$25.

5743. Adulteration of shell eggs.

Adulteration was held because examination of three cases, containing 900 eggs, showed 228 eggs, or 25.3%, to be inedible and decomposed. On May 7, 1917, the defendant pled guilty and was fined \$10 and costs.

5744. Adulteration of beans.

Decomposition was held to constitute adulteration. On June 27, 1917, the defendants pled guilty and were fined \$15 and costs.

5745. Adulteration of shell eggs.

Adulteration was held because examination of six cases, containing 2,160 eggs, showed 331 eggs, or 15.3%, to be inedible and decomposed. On March 29, 1917, the defendants pled guilty and were fined \$50.

5746. Adulteration and misbranding of baked beans.

Substantially the same as No. 5721.

5747. Adulteration of shell eggs.

Adulteration was held because examination of six cases, containing 2,160 eggs, showed 427 eggs, or 19.8%, to be inedible and decomposed. On March 28, 1917, the defendant pled guilty and was fined \$25.

5748. Adulteration of shell eggs.

Adulteration was held because examination of 324 eggs showed 124 eggs, or 38.3%, to be inedible and decomposed. On May 7, 1917, the defendant pled guilty and was fined \$10 and costs.

5749. Adulteration of shell eggs.

Adulteration was held because examination of two cases, containing 720 eggs, showed 325 eggs, or 45.1%, to be inedible and decomposed. On May 7, 1917, the defendants pled guilty and were fined \$10 and costs.

5750. Misbranding of cottonseed meal and cake.

Misbranding was alleged because the guaranteed analysis of "ammonia, not less than 8%; protein, not less than 41%; nitrogen, not less than 6½%; crude fiber, not more than 10%," was not substantiated by laboratory analysis, which showed crude fiber, 15.1%; protein, 33%; nitrogen, 5.28%; ammonia, 6.42%. On March 5, 1917, the defendants pled guilty and were fined \$50 and costs.

5751. Adulteration of tomato pulp.

Decomposition was held to constitute adulteration. On June 26, 1917, the defendant pled guilty and was fined \$10 and costs.

5752. Adulteration of pork and beans.

Substantially the same as No. 5728, excepting that the product was destroyed and the empty casks or containers were sold by the U. S. marshal.

5753. Adulteration and misbranding of apple vinegar.

Substantially the same as No. 5720, excepting that the product was relabeled, "A compound of apple waste, vinegar, acetic acid, and water," and sold at public auction by the U. S. marshal.

5754. Adulteration of tomatoes.

Substantially the same as No. 5704; bond \$1,000.

5755. Adulteration of tomatoes.

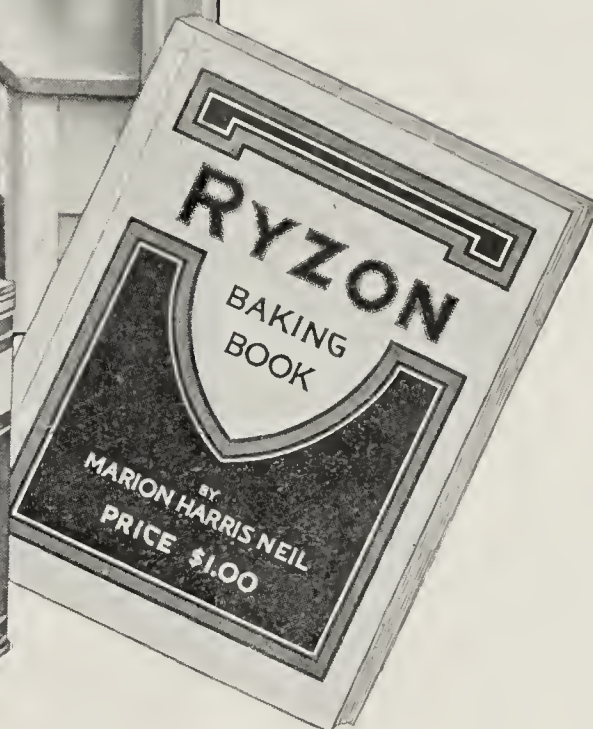
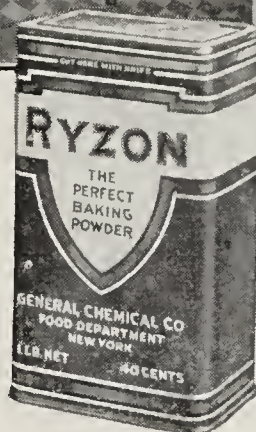
Substantially the same as No. 5704; bond \$1,000.

5756. Adulteration and misbranding of baked beans.

Substantially the same as No. 5704; bond \$1,000.



The Ryzon Kitchen



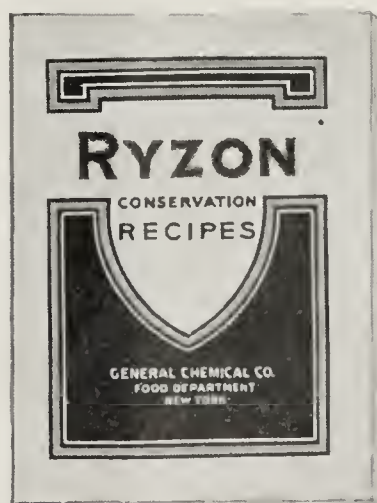
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5757. Adulteration and misbranding of "Lithiated Mount Clemens Aperient Water."

Adulteration was alleged because of filth and decomposition, and misbranding because of the false statement on the label that the article constituted a valuable, bitter water preparation of the famous Mt. Clemens mineral waters, and that it contained an appreciable amount of lithium and a substantial amount of Mount Clemens mineral water, whereas it consisted of a mixture composed in whole or in part of city tap water and added Epsom and Glauber salts, and which contained an inappreciable amount of lithium and little or no Mount Clemens mineral water; also, because of the false claim that the article was a cure for jaundice, gall stones, biliousness, subacute and chronic cases of rheumatism, piles, and indigestion. On August 22, 1917, the defendant pled guilty and was fined \$50.

5758. Adulteration and misbranding of vinegar.

A product labeled, "Pure Cider Vinegar," was held to be adulterated and misbranded because it contained added distilled vinegar or dilute acetic acid. On June 30, 1917, the defendant pled guilty and was fined \$180 and costs.

5759. Misbranding of "Sunshine Molasses Dairy Feed."

Misbranding was alleged because the guaranteed analysis of "not less than 4 per cent crude fat, 14 per cent protein" was not substantiated by laboratory analysis, which showed, 3.3 per cent crude fat and 12.3 per cent protein. On June 27, 1917, the defendant pled guilty and was fined \$25 and costs.

5760. Adulteration of beans.

Decomposition was held to constitute adulteration. On October 31, 1917, the claimants paid the costs of the proceedings and the product was delivered to them under \$1,000 bond, in conformity with section 10 of the act.

5761. Adulteration of milk.

Adulteration was alleged because butter fat had been in part abstracted from the article. On August 22, 1917, the defendant pled guilty and was fined \$25 and costs.

5762. Adulteration of granulated true unicorn root.

Adulteration was alleged because the product consisted of false unicorn root, which had been substituted for the true unicorn root which the article purported to be. On June 18, 1917, the defendant pled guilty and was fined \$25.

5763. Adulteration of milk.

The addition of water was held to constitute adulteration. On August 18, 1917, the defendant pled guilty and was fined \$25 and costs.

5764. Adulteration of malt sprouts.

The presence of hulls and chaff, and foreign matter, which had been mixed and packed with malt sprouts, in substitution of malt sprouts, was held to constitute adulteration. On May 1, 1917, claimant having admitted the allegation, the product was released to him upon payment of the costs of the proceedings and under \$1,000 bond, in conformity with section 10 of the act, conditioned, in part, upon proper labeling.

5765. Adulteration of tomato pulp.

Decomposition was held to constitute adulteration. On April 2, 1917, no claimant having appeared, the product was destroyed.

5766. Adulteration of pork and beans.

Adulteration was held because of filth and decomposition. On August 15, 1917, claimant having consented, the product was destroyed.

5767. Adulteration and misbranding of chloroform liniment.

Adulteration and misbranding was held because of the statement on the label that it contained "Chloroform 144 minims in 1 fluid ounce," whereas it only contained 95.9 minims chloroform, and because it was sold under and by a name recognized in the U. S. Pharmacopoeia, but differed from the standard of strength, quality and purity as set forth by the U. S. Pharmacopoeia. On October 9, 1917, the defendant pled guilty and was fined \$20.

5768. Adulteration of grapefruit.

Rotten, filthy and decomposed grapefruit were held to be adulterated. On March 22, 1917, no claimant having appeared, the product was destroyed.

5769. Adulteration of grapefruit and oranges.

Adulteration was held because of filth and decomposition. On March 22, 1917, no claimant having appeared, the product was destroyed.

THE AMERICAN FOOD JOURNAL



—with which was combined on May 15, 1918—

THE FOOD LAW BULLETIN

With abounding faith in the future of the food industry and with due insistence upon its present dignity, this periodical is dedicated to the cause of wholesome foods, honestly sold. All such—and no others—are given our hearty support.

Vol. XIII.

NOVEMBER, 1918.

No. 11.

World Food Situation Discussed by Mr. Hoover.

The war is over! However, that very fact brings this country—the food supply of the world—face to face with what may prove to be the most serious nutritional problem which has so far confronted us. Without doubt there is actual need for the exportation of much food into Germany and Austria—our late enemies. We cannot, and will not, allow them to starve to death.

Roughly we must figure upon supplying food to two hundred million more people than was the case before the signing of the armistice. During the war all loyal Americans have complied with the mandates of Mr. Hoover, irksome as they at times appeared to be, because of the fact that we were at war, because the food which our self-imposed deprivations rendered available for export went to our comrades in arms; and the glory of the flag was over it all. Now we must do even more than has been asked of us in the past and must do it with the realization that much of the food is going to those who until recently were our enemy, and must do it without the stimulation of the patriotic fervor incident to war.

Mr. Hoover's address, which follows, and which was delivered before a special conference of Federal Food Administrators held in Washington on November 12th, discusses this matter in detail, and with the admirable poise and intelligent insight characteristic of him.—Editor's Note.

We have now to consider a new world situation in food. We have to frankly survey Europe—a Europe of which a large part is either in ruins or in social conflagration; a Europe with degenerated soils and depleted herds; a Europe with the whole of its population on rations or varying degrees of privation, and

large numbers who have been under the German heel actually starving. The group of gamblers in human life who have done this thing are now in cowardly flight, leaving anarchy and famine to millions of helpless people. We have also to survey the situation in the exporting nations of the world, to see what can be done to redeem this mass of humanity back to health and to social order. Up to the collapse of the Germans the world that is allied against Germany has depended upon the North American continent for the margins of food that maintain their strength against the common enemy. The loss of shipping and the increased demands for transportation of our ever growing army had isolated the stores of food in the Southern Hemisphere and the Far East. Within thirty or sixty days the world should begin to release cargo ships from military duty and to send them further afield for food, and before the next harvest arrives, the entire world's food supply should be accessible. On the other hand, the cessation of hostilities will create an enormously increased demand for food and we must be deeply concerned that the starving millions who have been liberated from the German yoke shall have such supplies as will enable them to return to health and prosperity. The war has been brought to an end in no small measure by starvation itself, and it cannot be our business to maintain starvation after peace. All these considerations must change our domestic food policies, and open to us as a nation an obligation and an opportunity of service.

We must now take an account of the whole food resources of the world and we must take an account of the total demands. We must consider carefully how this situation reacts upon our people. We must consider our national duty in the matter and we must

make such changes in our policies as are fitting to the new situation. We have thus a new orientation of the whole food problem and it is an orientation that affects every one of the great groups of commodities in a different manner. The matter of prime interest to us is how much of each commodity the exporting countries can furnish between now and next harvest and how much is necessary to the importing countries in which we have a vital interest, in order to maintain health and public order in the world. We have computed the export countries' supplies on the basis of the avoidance of waste and we have assumed for the importing countries stringent war consumptions with additions such as we consider will preserve health and order. In these circumstances we make the world's balance sheet in the different great groups of commodities approximately as follows until next harvest:

Wheat and Rye—Sufficient supplies with economy in consumption.

High Protein Feeds (for dairy animals)—A shortage of about three million tons.

Other Feeds—Sufficient supplies with economy in consumption.

Beans, Peas and Rice—Sufficient supplies with economy in consumption.

Pork Products, Dairy Products and Vegetable Oils—A shortage of about three billion pounds.

Beef—Sufficient supplies to load all refrigerating ships' capacity.

Sugar—Sufficient supplies for our normal consumption if other nations retain their present short rations—a shortage if they increase their rations.

Coffee—A surplus.

Of all these foods, except possibly protein feeds, we have a sufficiency for our own people and in many of them large surpluses. Of the world total to produce the above results, we are estimating North America will furnish rather more than sixty per cent and that the United States, including the West Indies, will be in position to furnish a total of about twenty million tons of food of all kinds, for export against our pre-European war exports of say six million tons.

Calculations of this order are vitally necessary if we are to intelligently guide the policies in the United States. On the other hand, all such calculations are based upon assumptions as to transportation, production and consumption which may be subject to great disturbance and distortion during the reconstruction period. For the present we can accept and rightly guide ourselves by these conclusions, and we may examine in more detail the position of each group.

In the matter of wheat and rye, the large supplies that have accumulated in the Argentine, Australia and other inaccessible markets appear to us to supplement the stores of clear wheat bread for the world. It will, however, require a continued high percentage of milling with continuous economy in consumption and the elimination of waste. Here directly arises a change in our policies, for we are able from now on to abandon the use of substitutes in our wheat loaf. The world's supply of wheat at this juncture is a priceless blessing, for, while bread comprises but 25 per cent of our national diet, the food of Europe is from 50 to 60 per cent sheer bread. The large harvest that we have here this year is to a large degree the result of guaranteed price, and we may rightly be proud that our production and conservation policies have provided the necessary margins to the world, of its daily bread.

We can export, together with other surplus countries, an apparent sufficiency of the coarse grains for feeding purposes, that is, of oats, barley and corn. On the other hand, there is a world shortage of high protein feeds, that is, the wheat feeds, the seed and bean meals, upon which the dairy production of the world, and particularly of Europe, so considerably depend. This shortage extends to the United States and, in our case, is due largely to the necessary diversion of cotton-seed meal to use as fertilizers and, to some degree, to our shortage in wheat millfeeds, due to our hitherto reduced use of wheat flour. This latter will be somewhat corrected by the elimination of substitutes in our bread. Thus the change in world conditions should somewhat ameliorate our dairy feed situation.

The shortage in protein feeds directly contributes to the world's shortage in the supply of fats. If we examine the position of the dairy products, the pork products and the vegetable oils, we find that in every item there is a shortage in the needed supplies for the whole world, although we are estimating with economy the export possibilities of the United States in all these products at over four billion pounds, of which from three to three and one-half billion comprise pork products. This world fat shortage is due primarily to the fact that Europe has been steadily under-feeding its dairy herd, has made steady inroads into its herd of hogs during the war and to the fact that there has been a great degeneration in the production of vegetable oils in certain regions, owing to the inability to secure shipping.

Of our export possibilities in fats, the largest item is pork products. Here again we have a right to congratulate ourselves as to the policies pursued in the administration of food supplies in the United States by the Department of Agriculture and the Food Administration. If you consider that we have reasonable promise of ability through increased production and conservation to export seven times as much products as our pre-war average and if you consider the vital importance of this extra contribution in fats in this new war against famine, we are justified today in our every act in the stimulation of production of this commodity. While we cannot supply the world's full deficiency we have ameliorated it enormously.

As you will recollect, eighteen months ago, when we had to define our food policies, we stated that the only hope of a sufficient production of fats and meat for the world either in peace or war, lay in the stimulation of production of the American hog. In that direction we could obtain results in twelve months, whereas, in any other direction, years would be required for expansion of fat production. The American farmer has responded to a remarkable degree. In order to assure this change in agricultural courses we promised the farmer a fair return on his hogs, so far as our control of export orders gave us the power. It is our duty to make this undertaking good.

Yet, with all our supplies, the world will be far deficient in its normal supply of fats for two or three years at least. Our internal policy with regard to this group of commodities must therefore be one towards intensest economy in consumption, if we are to carry out our high purpose of furnishing food to a famine stricken world.

Policies of conservation require great care and guidance. For instance, for the next thirty or sixty days there is barely enough shipping at our shores to take care of our current production of pork products,

and our storage is deficient. Later on when ships are available, we will need to call upon our people for great sacrifice. On the other hand, the shortage in our supply of dairy products is today so acute that we are compelled to now limit the export of this product. Dairy products are so vital to the protection of child life throughout the world that we should immediately reduce our unnecessarily large consumption of butter and condensed milk.

In the matter of beef, the world's supplies are limited to the capacity of the available refrigerating ships. The supplies of beef in Australia, the Argentine and the United States are sufficient to load these ships. There will be a shortage in the importing countries, but we cannot hope to expand exports materially for the next months, in view of the bottle neck in transportation.

It is very difficult to forecast with any degree of accuracy the position in sugar. At the present moment all Europe and North America are living on much restricted allowance. Our assured supplies under the purchases we have made are the largest per capita in the world. This is not greediness, for we have throughout the war asked our allies to supply themselves first and we would do with the remainder. They have sacrificed sugar to provide ships for other purposes. If we assume that Europe will continue on present rations, then the world supplies, now enlarged by rendering Java sugar available, are sufficient to provide our entire normal consumption. If Europe raises its ration very considerably, there will be a shortage.

The Food Administration has protected the fundamental supply to the American people by purchasing, in conjunction with the Allies, the next Cuban sugar crop. We have made such arrangements with the various refiners and producers in the United States and with the producers as will assure a price of nine cents a pound wholesale for sugar during the next twelve months. This price compares with from twelve to twenty cents a pound in the other sugar importing countries.

As the result of these arrangements and the fact that Eastern sugars will be available, we will need little or perhaps no restraint on consumption after the new Cuban crop is available, unless, as I have said, the other governments in the world decide to considerably increase their present rations. I do not think our people would want us to maintain an extravagant and luxurious use of sugar in soft drinks and confectionery when there is an actual hardship for the necessary sugar for household use in other countries. With the present world outlook, we are taking steps to relax the restrictions which it was necessary for us to impose on consumption when we based the outlook for the whole of Allied supplies directly on North American sugar alone. Here again we must be guided from time to time by the world situation, but we have no desire for conservation sheerly for conservation's sake.

Another prime necessity in the United States is that of coffee. Our computation of the world's coffee supplies indicate to us that there is more than a sufficiency to carry the world during the next twelve months on any basis of likely demand, and sooner or later the speculation which has been in process in some foreign countries over coffee, on the theory that there would be a world shortage on peace will, in our view, receive a rude shock.

This being the new world situation in food, created by the collapse of the war, the prime changes in

our policies on to-day's outlook can be summarized:

That we may now advantageously abandon the use of substitutes in our wheat bread; that we will still require economy and elimination of waste in its consumption; that for the present we need conservation in butter and condensed milk; that ultimately we must extend this to all the fats. We can contemplate, at the most, maintaining fully three pounds per month of sugar per person, on the present outlook, and we can, by the availability of Java sugars to Europe, begin at once to relax more restraints on sugar pending some change in European policies.

These are special features of changes in policy, but the shifting of conservation from one commodity to another is not the whole policy. There is one policy which cannot change, and that is the vital necessity to simple living, to economy in all consumption for commodities more or less substitute for each other. We must realize that the specter of famine abroad now haunts the abundance of our table at home. There are conditions of famine in Europe that will be beyond our power to remedy. There are 40,000,000 people in North Russia to whom I fear but little access with food can be obtained this winter. Their transportation is demoralized in complete anarchy and shortly many of their ports will be frozen even if internal transport could be realized. I expect the most dreadful results of starvation beyond all human power to allay.

I now come to the question of the future of the Food Administration as an administration. This administration was founded by the President to—

(a) Administer portions of the provisions of the Lever Act and this has been accomplished, to a considerable degree in co-operation with the many trades of the country.

(b) Control of foreign distribution of food.

(c) Enter into such voluntary arrangements with producers, manufacturers and others as would stabilize commerce, stimulate production and to carry out the Government assurances to these ends.

(d) Co-operate with the Department of Agriculture in food productive policies to world purposes.

(e) Co-operate in the domestic and overseas transportation and distribution of foodstuffs with the Railway Administration and Shipping Board.

(f) To control and arrange for our necessary food imports.

(g) Co-ordinate all import and export and Army and Navy buying of food so as to prevent chaotic marketing conditions.

(h) Co-operate with the American people in conservation of consumption.

That portion of our work under the Lever Act revolves largely around the curtailment of speculation and profiteering. This Act expires at the signing of peace with Germany, and as it represents a type of legislation only justified under war conditions, I do not expect to see its renewal. It has proved of vital importance under the economic currents and psychology of war. I do not consider it as of such usefulness in the economic currents and psychology of peace. Furthermore, it is my belief that the tendency of all such legislation except in war is to an over degree to strike at the roots of individual initiative. We have secured its execution during the war as to the willing co-operation of 95 per cent of the trades of the country, but under peace conditions it would degenerate into an harassing blue law.

The law has well justified itself under war conditions. The investigations of our economic division clearly demonstrate that during the first year of the Food Administration farm prices steadily increased by 15 per cent to 20 per cent on various computations, while wholesale prices decreased from 3 per cent to 10 per cent, according to the basis of calculation. Thus the middle man's costs and profits were greatly reduced. This was due to the large suppression of profiteering and speculation and to the more orderly trade practices introduced under the law.

It is my desire that we should all recognize that we have passed a great milestone in the signing of the armistice; that we must get upon the path of peace; that therefore we should begin at once to relax the regulation and control measures of the Food Administration at every point where they do not open a possibility of profiteering and speculation. This we cannot and will not permit so far as our abilities extend until the last day that we have authority under the law. When we entered upon this work eighteen months ago our trades were rampant with speculation and profiteering. This grew mainly from the utterly insensate raids of Europe on our commodities. I look now for a turn of American food trades towards conservative and safe business because in this period that confronts us, with the decreased buying power of our own people, of uncertainty as to the progress of the world's politics, with the Government control of imports and exports, he would be a foolish man indeed who today started a speculation in food. This is a complete reversal of the commercial atmosphere that existed when war began eighteen months ago, and therefore the major necessity for law in repression of speculative activities is to my mind rapidly passing. It is our duty, however, to exert ourselves in every direction to so handle our food during reconstruction as to protect our producers and our consumers and to assure our trades from chaos and panic.

While the expiration of the Lever Law can be faced without anxiety, the other functions of Food Administration must continue. Some organization must be continued or some organization must be set up to guide our distribution of food abroad, if it shall reach the most deserving and the most necessitous. This implies a large knowledge of European and foreign conditions and can only be founded on continued expansive organization. The vast purchases for export are now all in the hands of governments, many of them acting in common, and their powers in buying could, if misused, ruin our producers, or, alternatively, do infinite harm to our consumers. An utter chaos of speculation and profiteering would reign if these buyers were not co-ordinated and controlled.

Someone must co-ordinate the internal transportation of these large exports with our domestic distribution if we are not to entangle our domestic supplies and are to have effective handling in our ports. Someone must co-operate with the Shipping Board in the provision of overseas tonnage. Someone must organize our own needed imports of sugar, coffee and vegetable oils. Someone must stimulate and guide our people in their desire to help in this war against famine. It is in these directions that the future of some kind of Food Administration lies. An organization is now called upon to fight against famine. Fortunately, I believe this new war privation finds its own peace at next harvest. What the constitution of this organization is to be must be developed with thought and

care. In any event the Government must have the continued service and help of you who are tried and experienced.

When the Food Administration was founded I incorporated in its personnel a number of the men from the Belgian Relief Commission, of which I have been the chairman since its foundation in 1914. Aside from this duality of personnel the Food Administration has itself, through its departments, largely administered the relief at this end. This great work of mercy has gone on until this day, and during the past week the President has requested me to expand the activities of the Relief Commission to cover the whole relations of the United States to the reconstruction of Belgium, pending reconstitution of normal commerce and the payments by the Germans in cash for the ill they have done.

I am desirous that in all these enlarged activities I should have the continued service and support of you gentlemen who have contributed so much to solve our war problems. There is no service to humanity that so touches the American heart as solicitude and help for these downtrodden people of Belgium. The details of this service must in the main await my arrival in Europe. In the meantime, the urgent questions of food and clothing are being attended to.

I am also leaving for Europe for a conference over another situation equally enlarged. From our findings there must arise details in organization to meet a much wider situation. There must be a feeding of the people who have been liberated from the German yoke. That feeding must be organized, and in order that we may get effective and prompt action from the United States the War Department has recently undertaken, at our suggestion, to largely divert their military tonnage to the transportation of food and the enlargement of the quartermaster's stores in Europe that we may have them immediately available.

At this moment Germany has not alone sucked the food and animals from all those masses of people she has dominated and left them starving, but she has left behind her a total wreckage of social institutions, and this mass of people is now confronted with engulfment in absolute anarchy. If we value our own safety and the social organization of the world, if we value the preservation of civilization itself, we cannot sit idly by and see the growth of this cancer in the world's vitals. Famine is the mother of anarchy. From the inability of governments to secure food for their people, grows revolution and chaos. From an ability to supply their people, grows stability of government and the defeat of anarchy. Did we put it on no higher plane than our interests in the protection of our institutions, we must bestir ourselves in solution of this problem. There are millions of people now liberated from the German yoke for whose interests we have fought and bled for the last eighteen months. It is not up to us to neglect any measure which enables them to return to health, to self-support and to their national life. This is the broad outlook of some kind of Food Administration during the next twelve months. As to what the detailed structure of our organization may be to effect these ends, or even its actual name, can be developed from time to time to suit necessity. It will be months until formal peace; in the meantime the organization must remain intact if we are to serve the high purposes that I have outlined. And after that we can decide our courses upon the basis of our national duty.

The Peanut: A Great American Food*

AT THIS time, when conservation of all our food-stuffs is necessary, special attention should be given to the peanut, one of America's best and cheapest foods. It can be used in the place of wheat, and being rich in protein and fat, it may also serve as a meat substitute. The peanut is one of the most nutritious foods known to man, and possesses a very wide range of food possibilities. In one form or another it is almost universally eaten and enjoyed in this country, and it promises eventually to occupy an important place in the average well-balanced ration, as it now does in the dietary of a great many persons. Indeed the demand for this legume for human food purposes is increasing by leaps and bounds.

A pound of whole peanuts, as used in confections, peanut butter, etc., contains nearly one-half pound of fat and one-fourth pound of protein, both the oil, or fat, and the protein being of a very high grade and readily digestible. One pound of peanuts furnishes about 2,700 calories, while 1 pound of beefsteak yields less than one-third as much, and 1 pound of eggs less than one-fifth that amount. If the peanuts are pressed and the flour and oil utilized separately, a delicious wheat substitute is obtained, in one case, and a sweet, wholesome table and cooking oil, in the other. Peanut meal rivals almond meal in popular favor. Both the peanut itself and the meal or flour are cheap sources of energy and protein, and lend themselves well to all sorts of culinary purposes. It should be understood that the peanut is a food, not a condiment, and therefore can be used to replace flour, meat, or fat. The oil extracted from the peanut is already one of the most important of the world's food oils.

Like the pea and bean, the peanut is a legume, but differs from other legumes in that its fruit or seed matures beneath the surface of the soil, hence its name *Arachis hypogea*, which means growing below ground. Other names commonly applied to the peanut are ground nut, earth nut, ground pea, pindar, goober, goober pea. Probably a native of tropical America, it was introduced into the United States during the early colonial days.

Two different types of the peanut are grown in the United States—the Virginia, or Jumbo, type, which includes such well-known varieties as Virginia Bunch, Virginia Runner, North Carolina or Wilmington (African), and the Spanish type, which includes the true Spanish, the Georgia Red, Valencia and Tennessee Red. The Spanish type is peculiarly adapted to the production of oil, while the best grades of the Spanish and the cheaper grades of the Virginia are commonly employed for the manufacture of peanut butter. The Spanish type contains from 55 to 80 per cent of kernel, with an average of about 70, while the Virginia type contains somewhat less, from 50 to 75, with an average of 65 per cent. To a large extent this variation is due to the difference in the soil and climate prevailing in the various localities where peanuts are grown. The results of many analyses of the two

types of peanuts give the following as the average composition of the kernel:

AVERAGE COMPOSITION OF THE PEANUT KERNEL.

Type.	Water, %.	Ash, %.	Fat, %.	Protein (N×6.25), %.	Fiber, %.	Carbohydrates, %.	Calories per pound.
Spanish	4.2	2.6	50.0	26.0	2.1	15.1	2,870
Virginia	4.2	2.7	43.7	29.0	2.8	17.6	2,709
Shell*	5.0-5.8	3.3-6.8	0.10-0.5	5.1-8.2	66.7-78.3	....	....
Skin*	9.6	7.7	14.2	15.5	23.4	....	....

*The shell and red skin have a certain food value, as shown by these analyses. The oil content of the shell may, however, fall as low as 0.1 per cent.

Only within the last half century, however, has the peanut assumed any commercial importance. Great strides have been made in its culture and consumption within the last decade, and in 1916 the South, which raises about 99 per cent of all the peanuts grown in this country, devoted over 1,000,000 acres to the culture of this plant, the yield being 34,600,000 bushels. So popular is this nut becoming that the number of acres planted to peanuts in the United States alone, in 1917, was estimated at over 2,000,000. The peanut is grown commercially not only in this country, but also in Central and South America, Algiers, Mozambique, India, West Africa and China. In Marseille, the center of the European oil industry, in 1912, over 120,000 tons of peanuts in the shell and about 240,000 tons of shelled peanuts were crushed, yielding over 15,500,000 gallons of edible oil. It is estimated that 26,000,000 pounds of oil were produced in 1916 in the United States.

The average yield per acre in the United States is about 34 bushels of peanuts in the shell. A good yield is 60 bushels, with 1 to 1½ tons of hay. Yields of 160 bushels, with 2 tons of hay, per acre are on record. The estimated crop for 1917, in the United States, is approximately 60,000,000 bushels of peanuts in the shell, which would yield 20,000,000 bushels of shelled nuts. In practice, a mill can produce 1 gallon of oil from 1 bushel of peanuts in the shell. One acre of land that will produce 20 bushels of wheat, 40 bushels of oats, or 40 bushels of peanuts will yield 154 pounds of digestible protein in the form of wheat, 149 pounds in the form of oats, or 186 in the form of peanuts. It will yield 24 pounds of fat in the wheat, 61 in the oats or 300 in the peanut. As fat and protein are the most valuable and expensive foods, it is apparent that the peanut should form one of the country's most important food crops.

The growth of the peanut industry in the United States during the last 15 or 20 years has been so great that few people realize its present importance. During this period of expansion few changes in the methods of handling have been made and there is now need for improvement all along the line, from the producer to the consumer. The problem which confronts the cleaner and dealer is to place upon the market peanuts that are clean and free from insect or other injury. Under the pure-food laws peanuts that are weevil-cut or improperly cleaned are subject to seizure if offered for interstate trade. In the future, buyers of peanuts will discriminate against goods that are badly broken or otherwise damaged.

While the primary trouble lies in the methods em-

* Compiled from recent writings on the subject by H. S. Bailey, Chemist in Charge, Oil, Fat and Wax Laboratory, U. S. Department of Agriculture; J. A. Le Clerc, Chemist in Charge, Plant Chemical Laboratory, Bureau of Chemistry, U. S. Department of Agriculture, and W. R. Beattie, Assistant Horticulturist, Bureau of Plant Industry, U. S. Department of Agriculture.

ployed in picking peanuts from the vines, there is need for general improvement both on the farm and in the cleaner's establishment. Farmers are not exercising proper care in the harvesting and curing of the crop. This results in placing upon the market too great a percentage of mildewed and damaged nuts. As peanuts come from the farms they too often contain dirt, stems, cotton stubble, and rubbish of all kinds, rendering necessary a system of docking of weight which leads to general dissatisfaction. The machines used for picking peanuts from the vines break many of the pods, rendering the kernels or "peas" subject to the ravages of insects during the summer. It is a well-known fact that if the shell of a peanut is not broken or cracked the peas will keep almost indefinitely. The present situation does not present any serious difficulties, but merely shows the need of a general improvement in all branches of the industry in order to place the work entirely above reproach.

Many of the growers of peanuts hold their crop through the winter months and on into the summer as a speculation. Very often the farmer does not have a suitable place to store his peanuts and heavy losses result from this practice. The first step in improvement will be to provide machinery that will not break or injure the peanuts and then to secure better methods of storage and handling. It is a fact to be deplored that cars and warehouses used for the transportation and storage of peanuts are often not as clean as they should be, and in the past very little attention has been given to the matter of preventing injury from insects, rats and mice.

In the sections where the bunch peanuts are grown the work of stacking and curing is, as a rule, quite well done and very few are damaged. The greatest injury is found where the runner pea is grown, and this is due primarily to the heavy growth of vine, with the pods borne all along the stems, rendering it difficult to stack the vines without a part of the peas being exposed to the weather. This exposure causes the mildewing of the pods and frequently the molding of the peas, which may be avoided by more careful stacking and proper capping of the stacks with peanut vines or hay. In some sections the farmers pick the peas from the vines before they are properly cured, causing them to mold in the bags or in the storage bins.

So long as the bulk of the peanut crop was picked from the vines by hand very little trouble was experienced with the breakage of the pods. The scarcity of labor has compelled the adoption of machinery for picking peanuts, and many of the machines have proved far from satisfactory in that they break the shells.

Peanut-picking machines are of two classes: (1) Cylinder machines similar to the ordinary grain thrasher, and (2) picking machines which remove the peas from the vines by means of a woven-wire screen. The cylinder machines break a large number of pods when run at a high rate of speed, and since the work of picking is paid for by the bag, there is a tendency on the part of the owner of the machine to run through as many as possible. If the machines are not overfed and the cylinder is run at a speed not exceeding 370 revolutions per minute, the damage will not be great.

The picker type of machine does not break any appreciable number of pods and its work is almost equal to that done by hand. The fault of all these

machines is that they do not properly clean the peanuts; the manufacturers, however, are now providing a more complete cleaning process.

Every farmer who hires his peanut crop picked should see that the machine does proper work, that the pods are not broken, and that the peas are well cleaned. The most successful operators of thrashers and picking machines do not crowd the work and are content with turning out 60 to 75 bags a day. It should be borne in mind that peanut-picking machinery is still more or less in the experimental stage and that many improvements remain to be made. For the present the demand is for quality of work, although there is no reason why the capacity of these machines should not be increased. Considerable breakage of the pods comes from trampling upon them around the thrasher, and this can largely be avoided by keeping the loose and shattered pods well cleaned up while the work is going on.

It has been the custom for a few cleaners and warehousemen to buy up peanuts during the autumn and to store them in warehouses holding from 20,000 to 100,000 bags each. Many of these warehouses are cheap frame structures. Recently some very fine storage houses have been built for this purpose. The type of building which seems to be best adapted to the storage of peanuts is four or five stories in height, with heavy brick walls and either concrete or mill construction floors. For best results the distance between floors should be but 10 or 11 feet. It has been found most economical not to pile the bags so high that two men cannot handle them without climbing upon the bags that are already placed. Walking over the bags is sure to break a large number of the pods, and even the piling of the bags to a great height will crush the shells in the lower bags. It is recommended that occasional alleyways be left between the rows of bags instead of the solid method of piling now practiced. It is customary to have an elevator near the entrance to the warehouse, and the openings between floors should be provided with iron doors to prevent the spread of fire.

There can be no doubt that many peanuts are broken and injured by careless handling. Catching hold of the corners of the bags for handling may break the pods. Jamming the bags with trucks or carts also causes considerable breakage.

A practice which no doubt will be discouraged in the future is the mixing of old goods with new in shipping. Many farmers hold over a few bags from one year to another and frequently these are sold for the current season's crop by simply placing a bag here and there in a car of new peanuts. These old goods are often damaged and should at least be kept separate from the new stock. The branding of every bag with the name of the grower and the year that the peanuts were grown would solve this difficulty, especially if required by law. The mixing of old and new goods is not always traceable to the farm, but more often to the merchant's storehouse where peanuts from a large number of farms have been brought together.

As the cars arrive at the factory the bags of peanuts are weighed and placed in storage until wanted for cleaning. As a rule no precautions are taken to guard against broken or "weevil-cut" goods. It would be feasible to provide a tight room near the entrance to the warehouse into which the peanuts could be run as they come from the car and given a fumigation before



FIG. 1.—PEANUTS FOR MAKING PEANUT BUTTER ARE ROASTED IN REVOLVING DRUMS, THEN DUMPED INTO LARGE TRAYS AND COOLED BY A BLAST OF COLD AIR. Yearbook U. S. Dept. of Agriculture, 1917.

being placed in storage or cleaned. This would apply especially to peanuts shipped during the summer months, after "weevil" damage has begun. It would not be practicable to separate the broken peanuts from the perfect ones as they come from the cars except in cases where the breakage is very great. All badly broken stock should be manufactured early in the season before there is any danger of injury.

It is highly important that warehouses and cleaning establishments be kept clean and free from everything that will harbor "weevils." Screenings and other refuse, commonly sold for hog feed, should be removed to a building located some distance from the warehouses and factory. Old bags should not be piled in the factory but should be kept in a separate building.

It is customary for the cleaners to stack the bags of shelled peanuts in a corner of the factory, where they are exposed to the dust. By this method the shelled peanuts are liable to attack by insects coming from infested stock in the factory. The finished goods should be stored either in a specially constructed building or in a room tightly built to keep out dust. By this method it would also be possible to give these goods a fumigation before shipment.

Shelled peanuts are subject to injury from moisture or from extreme heating. The storage room should be dry and should be so located that the heat from the engines or boilers will not affect it. This storage room for shelled goods should be arranged for convenience both in handling the bags from the filling machines and in loading them into the cars.

The roasted peanut, the most popular of the different peanut foods, may be obtained at stores and of street vendors everywhere. It is easily eaten and

forms a most important article of diet, being especially well adapted as a sort of emergency ration.

There is no definite rule as to the time of roasting. The usual practice in the case of peanuts in the shell is to maintain a temperature of from 400 to 450° F. for about 30 to 35 minutes, depending somewhat on the condition of the peanuts. Most peanut roasters merely gauge this by sampling them from time to time. When the shelled peanut is being roasted the temperature should not exceed 320° F.

The salted peanut is another form which is growing very rapidly in popular esteem. The peanuts are first roasted, then shelled and salted.

The blanched peanut, used in making brittle candy, cakes, and cookies, is prepared as follows: The blanching, which consists of removing the red skin and the germ, can be accomplished by rubbing the roasted and shelled peanuts by hand over a wire-bottomed screen or sieve. This rubbing removes the skin and separates the kernels into halves, at the same time removing the germ, which falls through the screen if it is of proper size. The skins can be separated from the meats by pouring the nuts from one vessel to another in front of a fan, which blows out the light seed coats.

During recent years great quantities of shelled peanuts have been converted into peanut butter, which has become very popular for use in soups, gravies, in connection with macaroni, and for sandwiches. The Spanish nuts, which give smoothness to the product, and Virginia nuts, which give flavor, are used for this purpose. In the process of manufacture the shelled and blanched roasted kernel is ground to a pulp by means of a special grinder similar to that used for chopping meat, about 1 to 3 per cent of salt being added during the grinding. (Fig. 1.)

The flour or meal, obtained either directly from the peanut roasted or raw, or from the peanut-oil cake, is now on the market in some places, and may be expected to be available in increasing quantities during the coming year. This product is especially well adapted to serve as a part substitute for wheat flour in the making of bread, biscuits, cakes, gems, griddle cakes and waffles. Flour obtained by grinding the roasted or unroasted peanut has the same composition as the peanut kernel. When, however, it has been prepared from the pressed cake, after most of the oil has been removed from the peanut, the flour contains a very high percentage of protein.

COMPOSITION OF PEANUT FLOUR AND WHEAT FLOUR.

Flour from—	Water, %.	Ash, %.	Fat, %.	Protein (N×6.25), %.	Fiber, %.	Carbohydrates, %.	Calories, per lb.
Peanut cake.....	8	4.8	8	48	4.7	26.5	1,722
Shelled nuts.....	4	2.7	47	28	2.5	13.8	2,877
Wheat	12	.5	1	11	.2	75.3	1,647

It will be seen that peanut flour from the peanut pressed cake, which is the usual source of this flour, contains over four times as much protein, eight times as much fat, and nine times as much mineral ingredients as white flour. The amount of flour available depends upon the nature of the peanuts pressed. When shelled nuts are used, the pressed cake is practically all available for flour purposes. When the nuts in the shell are pressed, the oil cake, containing the hulls and red skins, must be purified before the flour can be used for human food.

When bread is made from 1 part of ground peanuts (from shelled nuts) and 3 parts of wheat flour, the product is very rich in protein, fat and mineral constituents, as may be seen from the following table:

COMPARISON OF COMPOSITION OF 25 PER CENT PEANUT BREAD AND SPRING-WHEAT FLOUR BREAD.

Composition.	Spring wheat flour bread.	25 per cent peanut bread.
Total ash, per cent.....	1.28	1.61
Salt-free ash, per cent.....	.31	.62
Fat, per cent.....	2.08	9.45
Fiber, per cent.....	.13	.42
Protein (N×6.25), per cent.....	8.74	12.25
Carbohydrates, per cent.....	52.77	41.25
Calories	1,223	1,394
Nutritive ratio	6.6	5.3
Water, per cent.....	35	35

Such bread is far more nutritious than white flour bread. A study of the protein of the peanuts has shown that it is especially rich in basic amino acids, and therefore resembles the proteins of meat to a large extent. The peanut might therefore prove highly effective in supplementing flour made from wheat whose proteins are deficient in these valuable basic amino acids.

Cakes, especially small cakes, can be made in the usual way, by using almost any combination of wheat flour and peanut flour. Biscuits, of the baking-powder variety, can be made with one-half peanut flour and one-half wheat flour. An even larger proportion of peanut flour and a correspondingly smaller amount of wheat flour can also be used with excellent results.

Not all the peanuts which this country is now producing are marketed for the purposes already mentioned. There is a limit to the small boy's appetite for roasted peanuts, and his big sister cannot eat all the salted peanuts which might be made. Neither are there enough picnics, school lunches and vegetarian homes to consume the thousands of pounds of peanut butter which could be made from the harvest of our

southern fields. Even before the Great War there was an increasing demand for vegetable fats and oils. Furthermore, new uses for vegetable oils were being discovered, and the rising price of butter, coupled with a better understanding of the food value of margarines, had brought about an increase in the consumption of peanut and other vegetable oils. These and other causes, such as the inroads of the boll weevil in portions of the cotton belt, have led to a very surprising increase in the quantity of peanuts produced in America and in the proportion of our annual crop which is pressed for oil.

The production of peanut oil is an old-fashioned industry in Europe, and for years large quantities of African and East Indian nuts have been pressed in France and Holland. In making those grades of oil which are used for food purposes, the French have always used the cold process, and made what is called a virgin oil. Just as in the production of the highest class of olive oil, the better grades of fruit are cold pressed at relatively low pressure, so with peanut oil, the higher qualities of oil are made by cold pressing sound nuts. But the yield of the oil from the cold pressing is, of course, lower than when the nuts are first cooked in order to start the oil, and then subjected to great pressure.

There are, then, two distinct processes for making not only peanut but other vegetable oils: First, the cold process, giving a comparatively low yield of oil, which, however, requires no further treatment to render it satisfactory for table use; and the hot process, which yields more gallons of oil per ton of the peanuts pressed, but an oil with such a strong taste that it must be refined and often also deodorized. (Fig. 2.)

The refining of crude peanut oil consists simply in treating it with the proper amount of caustic-soda solution to remove what fatty acids may be present; and then separating the soaps thus formed from the unaffected oils. The most common method for deodorizing vegetable oils is to pass a current of superheated steam through them, and carry off by vacuum the vapors arising from the oil.

Oils which have been subjected to these processes lose nearly all of their characteristic flavor, and become so bland that the ordinary individual finds it difficult to distinguish between highly refined olive, cottonseed, peanut and corn oil. To those who like for their salads, and even for cooking, an oil which carries a taste of the fruit from which it was produced, the virgin oils will be more acceptable. Many people, however, do not like the taste of olive oil or virgin peanut oil, but prefer for shortening and table uses a bland, nearly tasteless product, and to such the refined peanut oil will appeal more than the virgin grade.

There seems to be some prejudice against peanut oil, based upon the idea that it will not keep well, that it becomes rancid more quickly than other oils. This may be due to the fact that until the last few years practically all of the peanut oil on the domestic market was imported from Europe, such oil being seldom of the first grade, since both France and Holland had a local demand more than equal to the supply of first-pressing oil. Experiments in the laboratory, and the experience of a number of housewives who have used properly made peanut oil, have shown conclusively that, if reasonable care be taken to keep the oil in a cool, dark place, it will not spoil within a year's time.

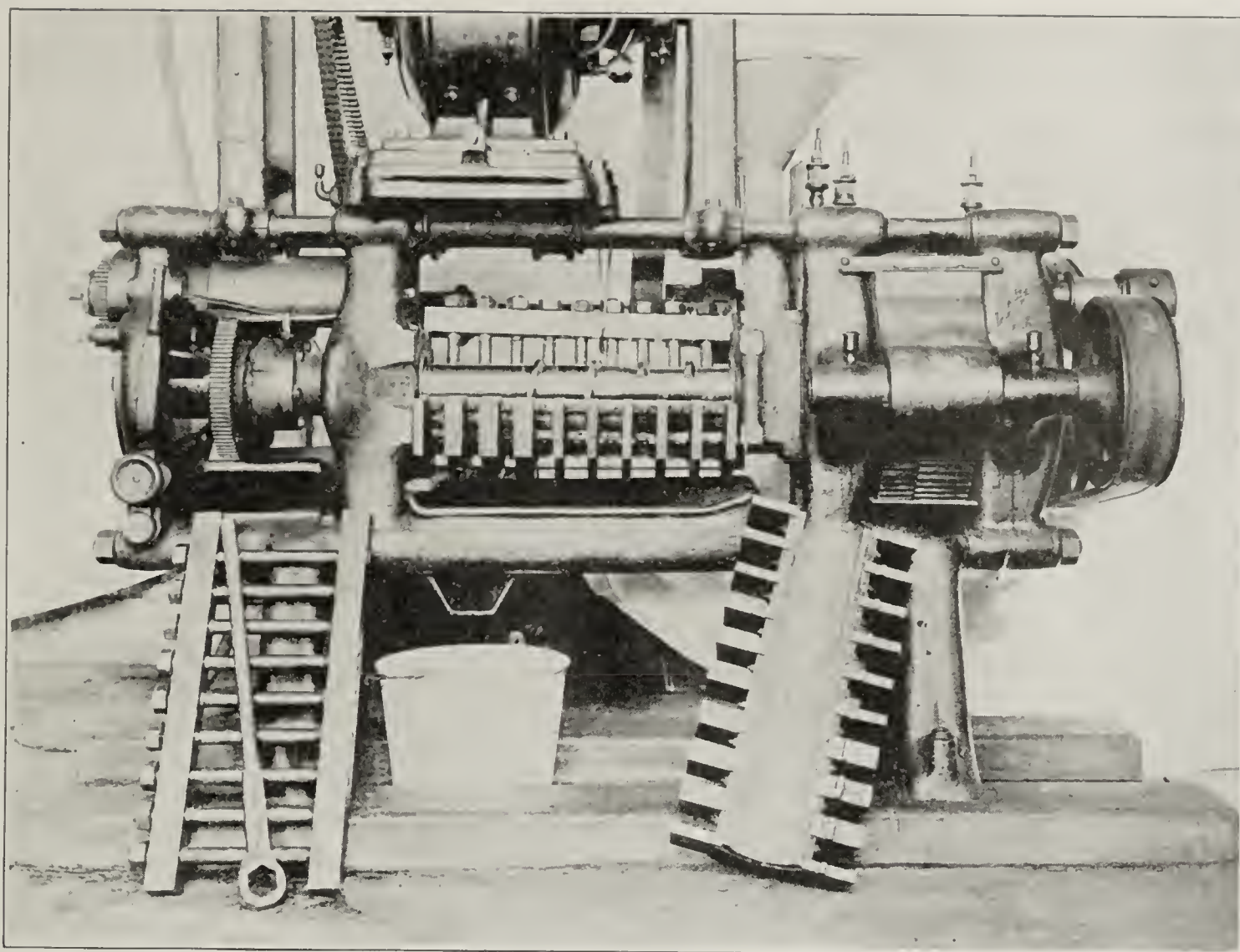


FIG. 2.—EXPELLER USED IN PRESSING PEANUTS AND OTHER OIL-BEARING PRODUCTS.
Yearbook U. S. Dept. of Agriculture, 1917.

For the making of salad dressings, either of the ordinary French type or those in which the oil is mixed with other ingredients to form a homogeneous emulsion, as in mayonnaise and cooked dressings, peanut oil will be found thoroughly satisfactory. Some grades of peanut oil apparently form a permanent mayonnaise dressing more readily than other salad oils. The difficulty sometimes experienced in making mayonnaise that will stay smooth and uniform is seldom encountered when peanut oil is used, even though the oil is added to the other ingredients without the precaution often necessary with olive oil.

For cooking purposes, such as deep frying and as a shortening in cakes and other baked goods where a butter substitute is desired, peanut oil will be found very satisfactory. To Saratoga chips and French-fried potatoes it imparts a slightly nutty flavor which many people think exceptionally fine, and sweet potatoes, cut in cubes, or strips, and cooked to a rich brown in this oil, will be found delicious.

Among those who prefer a solid fat to a liquid oil for cooking purposes the so-called lard substitutes or compounds are becoming increasingly popular. Until very recently, most of the compounds on the American market have been mixtures of cottonseed oil and the harder portions of beef tallow known commercially as oleostearine. The discovery of a process by which a liquid, such as cottonseed or peanut oil, can be made into a solid fat by treating the oil with hydrogen in the presence of a catalytic agent, usually nickel, has made it possible for the manufacturers to produce, at a price which permits them to compete with the older style of compounds, products which contain no animal fat. To this class belong

many lard substitutes sold under trade names. While many of these are made from vegetable oils other than peanut, this particular oil is becoming more and more popular with the manufacturers of hydrogenated compounds.

Another class of products which has only recently been manufactured and used in the United States includes the vegetable margarines. These are butter substitutes, manufactured usually from a mixture of coconut and peanut oil which has been ripened in skimmed or partly skimmed milk and then churned in a manner very similar to that used in the production of butter. The true oleomargarines, which have been used in this country for many years, are made in a manner similar to that employed in the manufacture of vegetable or nut margarines, as they are sometimes called, except that instead of coconut oil, neutral lard or oleo oil is used. It has been said that a large proportion of the peanut oil which this country imported before it began producing peanut oil itself was used by the packing houses and other manufacturers of oleomargarine.

Many inquiries as to the relative food value of different animal and vegetable fats are received by the Department of Agriculture. So far as the chemical analysis is concerned, they all have practically the same fuel value. Experiments made by the department¹ indicate that all the fats commonly used for edible purposes are digested with practically the same degree of completeness. Very recently it has been discovered that butter contains a growth-determining substance which appears to be absent from the vegetable oils and from the ordinary commercial animal

¹Office of Home Economics, States Relations Service.

fats. However, the fact that this substance, the exact nature of which has not yet been determined, does not occur in peanut oil need not deter anyone from the use of this valuable oil either for cooking purposes or in butter substitutes, as the ordinary diet of the average American household contains a sufficient quantity of other foods in which this growth-determining material occurs.

Summary.

To sum up, the use of the peanut and peanut products as food may be highly recommended for the following reasons:

- (1) The oil is most valuable as a table oil, equal to other oils in digestibility and food value.
- (2) The shelled nuts are a splendid food, cheap and nutritious.
- (3) The salted nuts are equally nutritious.
- (4) Peanut butter is highly useful in many ways besides being rich in fat and protein. It is a butter substitute and likewise a substitute for meat.
- (5) The whole shelled nuts as well as parts of nuts are well adapted for use in candies, cakes, cookies, wafers, etc.
- (6) The flour from the peanut itself or from the oil cake is a good part substitute for wheat flour for bread making or for making baking-powder biscuits, cakes, gems, waffles, griddle cakes, etc. Its high content of protein makes it a meat substitute as well.

Condensed Milk Takes Lead in Illinois.

Over 100,000,000 pounds of condensed milk and over 18,000,000 pounds of creamery butter were manufactured in Illinois in the first six months of this year, according to figures recently given by John B. Newman, Superintendent of the Division of Foods and Dairies of the Illinois Department of Agriculture. These totals are based on statistics contained in the "Summary Reports of Production of Milk Products" issued by the Bureau of Markets of the U. S. Department of Agriculture.

The following table presents in condensed form the six months' output of manufactured milk products in Illinois, the figures being taken from the report of Charles J. Brand, chief of the Bureau of Markets:

PRODUCTION OF MANUFACTURED MILK PRODUCTS IN ILLINOIS.					
Year	(000) Whey	(001) Creamery Butter.	(002) Process Butter.	(003 to 010) Cheese.	(011) Casein. (dried).
1918.	43,672	1,964,372	.....	212,241	15,173
Jan.	3,580	2,011,774	590,655	201,313	27,818
Feb.	216	2,151,580	628,202	316,987	13,603
March	732	2,505,751	249,605	413,851	10,253
April	1,053	4,337,764	287,527	671,939	24,060
May ....	.....	5,174,786	.....	696,048	.....
June ....	.....	.....	.....	.....	.....
	19,253	18,146,027	1,755,989	2,512,379	90,907
	(012 to 020)	(024)	(025)	(026)	(027)
Year.	Condensed and Evap- orated Milk.	Powdered Skim Milk.	Malted Milk.	Milk Sugar.	Ice-Cream (Gal.)
1918.	15,858,503	33,006	253,206	400	178,479
Jan.	13,655,666	1,435	223,824	.....	242,264
Feb.	18,974,982	3,748	293,450	400	421,057
March	18,016,097	45,135	305,536	.....	519,114
April	20,780,610	23,965	305,310	1,400	1,168,144
May	20,911,604	39,673	237,826	21,000	1,381,845
June ....	.....	.....	.....	.....	.....
	108,197,462	146,962	1,619,152	23,200	3,910,903

The reports for May and June are the latest that have been compiled by the Bureau of Markets relating to the Illinois situation.

Saccharin No Sugar Substitute.

The use of saccharin in foods is regarded as an adulteration under the Food and Drugs Act, according to a statement issued recently by the United States Department of Agriculture.

The department had been asked by various interests to reverse, or at least to reconsider, the position which it took in 1911 upon the use of saccharin in food brought under the jurisdiction of the Federal Food and Drugs Act. This position in effect is that investigation has shown that the continued use of saccharin for a long time, in quantities over three-tenths of a gram a day, is likely to impair digestion and that the addition of saccharin for cane sugar and other forms of sugar reduces the food value of the product and hence lowers its quality. Therefore, the Secretary of Agriculture declared that he would regard as adulterated under the Food and Drugs Act any foods containing saccharin, which might be brought under the jurisdiction of that law.

The department declares it is aware of no investigations which contribute any more recent evidence pointing to the harmlessness of saccharin. It has therefore declined to reverse its decision and it has regarded it as unfitting at this time to reopen the question for the reason that a case is now pending in the courts in which the issues are presented clearly. The department will endeavor to press the trial of this case.

New Baking Powder Standards in Canada.

The new Canadian standards for baking powder as specified in a recent order show a considerable relaxation from the former requirements. Under the regulations of March 8, 1918, it was required that the name of the acid material employed in the manufacture of the baking powder should appear upon the label, and any compounds containing aluminum sulphate were required to be designated as alums. These requirements were slightly modified but not essentially changed by an order of July 16. Under the latest order the acid materials need not be designated. It is only necessary that they be in themselves harmless to the health and that the compounds resulting from the interaction with bicarbonate of soda should also be harmless. The powder must also be capable of yielding 10 per cent of its weight of carbon dioxide.

Hens and Eggs in Holland are Scarce.

According to an official Government report, the number of hens in Holland has declined over 60 per cent during the past two years. The cause was the scarcity and high price of chicken feed, and the consequent inability to feed the chickens properly led to their being killed. The number of hens at the beginning of 1916 is estimated at 8,000,000, and at the present time at only 3,000,000.

The reduction in the number of eggs was from 755,000,000 in 1916 to about 550,000,000 in 1917. No estimate is made for 1918, but the decrease is great in comparison with 1917. Prices are correspondingly high.

The maximum Government price for an egg has, for a long time, been the equivalent of about 6 American cents, but practically none are to be had at that price. In normal times the price of an egg in Holland varies from 2 to 4 American cents.

Food Surveys of Other Countries

By CHARLES RYAN,
of the U. S. Food Administration.

NOW that peace has come it is interesting to survey the food needs of nations which have become largely dependent upon the United States for their existence after arms were laid down. There seems to be a general impression throughout the country that with the cessation of hostilities, the need for food conservation has passed. If the American people relax their efforts to save it will mean much suffering and deprivation abroad. In Germany there are almost 200,000,000 people who have been cut off from help by warfare, and who will find in America their only salvation.

In a very fragmentary way I shall review the food situation of some of the peoples who have become charges upon the United States by the consummation of peace and its consequent removal of bars to transportation.

Already we have assumed the burdens of contributing to the support of Austria-Hungary, Bulgaria, Turkey, and the smaller nations which have been released from the Teuton yoke. Only by redoubled efforts in this country may we hope to preserve from starvation these newly liberated peoples.

It is almost impossible to give a reliable survey of food conditions in any of the countries which until recently were aligned with our enemies. Reliable sources of information have been lacking for the past four years, but it is definitely known that all of the countries released from the Austrian yoke can be saved from starvation only if they receive help from the Allies.

In Austria-Hungary the populace has been confronted for months with the imminent prospect of famine. Crops have been short, imports have been cut off, and agricultural labor has been almost non-existent. In Turkey, where food control was not attempted by the government until 1917, and where food prices have risen about three thousand per cent in the course of a year, conditions are even worse. There has been actual starvation in Bulgaria and only a very small element of the public has not been hungry for many months.

A separate peace with Austria and the nations which have followed her lead has wrought many changes in the general food situation. It has brought a degree of comparative safety in Mediterranean transportation and has made more accessible the wheat supplies in India and Australia. In spite of the fact that these supplies are now made available, the food burden upon the United States must of necessity become heavier. There is now more than a possibility that the wheat situation both here and in Europe will be materially lightened, but demands upon us for other foodstuffs will increase with each mouth that is added to the millions we must already feed.

Now that the war is ended, it is possible to tap the supplies which have been accumulating in Asia and Australia. This, it is hoped, should make it possible to reduce the amount of wheat substitution in the bread of all the allied countries and allow the substitutes now being imported from America to be used for dairy feeds, of which there is a material shortage both in Europe and America. The situation here

is indirectly relieved by relaxing the restrictions upon the use of wheat flour.

The altered situation, brought about by peace, will thus enable us to secure a better adjustment between human and animal food. The change in this situation, however, does not alter the totals of food demands upon the United States. In fact, it increases our load, and therefore brings a demand for increased economy in the home consumption. With the liberation of the nations in Austria, it is anticipated that while more wheat may be needed from the United States, the largest imports to that quarter will be corn, rye, barley and fats. The Austrian merchant shipping must be placed in service, however, before exports can begin.

With the capitulation of Germany we are forced to assume the burden of participating in the support of more than a hundred million additional people. The Poles, the Fins, and other starving nations have become largely dependent upon us for their salvation. Although the release of the German merchant shipping for normal use makes it possible still further to tap other sources of supply, still America remains the storehouse of the world, and upon our people falls the heaviest part of the burden of feeding those who have suffered from the war.

Not until world production is again at normal can we possibly hope to relax the effort which has enabled the Allies to turn the tide against Germany.

Before the war, Poland, a rich agricultural country, was practically self-supporting. Today Poland faces famine. The Central Powers have established here their "centralen," through which most of the foodstuffs of this naturally productive country have passed into Austria and Germany. As far back as last March there were bread famines in many Polish towns. Such bread as was available was made of sawdust and green flour. At that time 4,000 head of cattle were requisitioned in Galicia alone by the German military authorities. By the end of July a meatless period of six months was proposed for the civil population.

In Poland, fats are unobtainable and there has been practically no sugar, although in normal times Poland produced a surplus of sugar. In pre-war times 23 per cent of the cultivated fields of Poland were sown with sugar beet.

The Polish economist, Janust Krolikowski, describes the havoc wrought by war upon Poland, in the following words:

"This land, in the days of old flowing with milk and honey, famous for its crops, proud of its paddocks and byres, today is a picture of ruin and destitution. The constant swaying of the battle-line resulted in the country being despoiled of everything worth taking. Whatever was not worth carrying off was burnt. Nowhere else are there so many charred ruins, so many graveyards, so many forests, such vast stretches of fallow land, scarred with so many trenches, pitted with so many shell craters."

Probably nowhere in Europe are food conditions more serious than in the Baltic provinces. Finland is in the throes of famine. Kuopio has been entirely without bread since September 16, except for a small

amount of grain which was recently furnished by Germany. There were many deaths from famine in Viborg, where there was absolutely no bread from August 1 until the middle of September. In some of the Baltic provinces, the grain had to be harvested before it was ripe, and in others, lichen and bark have been mixed in the bread to eke out the slender flour rations.

The Baltic provinces have never been pre-eminent in agriculture, finding it more profitable to import food and put their energies into paper and timber industries. The live stock industry has flourished, especially in Courland. Less than 30 per cent of the soil is cultivated in Courland, however. The people of the Baltic provinces today are on a daily ration of approximately 740 calories.

In Finland, bread grain imports have been reduced to 474,320,000 pounds less than average imports before the war. This has put the Finns on a daily bread ration of only 2.8 ounces—one-third of actual physical requirements.

Holland has suffered sorely from the disruption of marine commerce. The shortages most keenly felt are in fats, meats, breadstuffs, feeding-stuffs, coffee, tea and chocolate. All foods are strictly rationed, and the rations, from the American point of view, are extremely small. In the past year, there have been bread riots at the Hague, Amsterdam, and other large cities. So serious has been the meat situation that there has been a tremendous demand for horsemeat and even dogmeat. The butter production has fallen from 135,000,000 pounds in 1916 to 67,500,000 pounds in 1918 (estimated). Before the war Holland was a heavy manufacturer of margarine, but due to the decrease in food exports, the industry has almost disappeared. The fat ration of the Dutch is less than one ounce per day, including, not only butter and margarine, but all cooking fats. Poultry production has dropped 60 per cent since war was declared, and eggs are practically unobtainable. Potato exports have fallen 50 per cent and the export of potatoes to Germany has ceased altogether.

Holland is making a supreme effort to be as nearly self-supporting as possible. Agriculture is being fostered by a system of bonuses and high prices, and the cultivation of oil-bearing seeds is being made especially attractive to farmers. In spite of every effort of the government, however, only with greatest care will it be possible to maintain the present ration of four ounces of meat per week, seven ounces of bread per day, one-half pound of sugar and eight pounds of potatoes per week. We cannot possibly hope that Holland will not redouble her appeals for American food now that the war is over.

In Denmark, the situation is characterized in newspaper reports as being the worst since 1881. Since last December the number of milk cows has fallen from 1,147,000 to 950,000, and it is expected to drop to 850,000 in the next six months. Hay and forage crops have fallen to one-third of normal. The rate of slaughter will have to be increased in order to prevent starvation among the Danish herds. Since war started the swine population has fallen from 2,500,000 to 433,000. In pre-war times, Denmark produced a sugar surplus, but since 1914 her production has dropped more than 60,000,000 pounds. Denmark has always been largely dependent upon her fisheries, which in the past year have been a complete failure, and not only have not added greatly to the food resources of

the country, but have caused a loss of millions of dollars. In Iceland, which is almost entirely dependent upon fishing, conditions are even worse than in Denmark proper.

Conditions in Norway have been reviewed in detail by the American Consul at Christiania, who calls attention to a serious shortage of both potatoes and fodder. A shortage of potatoes entails a very real privation in Norway, where they are served with practically every meal, and have always been consumed in large quantities. The shortage is ascribed partly to increased consumption because of the low bread ration, and partly to the fact that considerable amounts of potatoes have been used to supplement the low stocks of fodder. The fodder shortage has obliged the farmers to kill off a large proportion of live stock, and, in consequence, the milk and butter supply has materially diminished. Butter is practically non-existent in the open market, and is being replaced almost entirely by margarine, composed largely of whale fat. The government has taken over the entire whale catch, which amounts to about 500 whales per year, each of which yields about 30 barrels of fat, as well as a large quantity of concentrated stock feed. As an indication of the scarcity of some food products in Norway, tea is now selling at \$2.20 per pound. On the whole, however, the government is meeting with loyal support, and the food situation is being met satisfactorily in spite of the fact that the rations are very small.

The Norwegian "Storting" was granted a \$27,000,000 "hard time subsidy" to care for those upon whom the greatly increased costs of living bring hardship. A part of this will be used to establish dehydration plants and storehouses for potatoes, part on non-bolted flour, part on the herring industry, part on margarine production, and about one-fourth of the total to meet the needs of the poor in different municipalities.

Similar to the Norwegian report is one made recently by the American Consul in Goteborg, Sweden. He feels that the laboring and middle classes of Sweden are unable to obtain sufficient quantities of any food, and that among these classes there is considerable suffering and inconvenience, if not actual starvation. Such has been the advance in living costs that the income of the working and middle classes is absorbed by rent and food. Flour, bread, sugar, coffee, rice, shelled grain, syrup, butter, lard, pork, peas, potato chips, etc., are rationed under a card system. Rice, potato chips, breakfast foods, beans and peas must be purchased with bread and flour cards, thus giving variety only by reducing the bread and flour ration. Syrup must be obtained on the sugar cards, while butter, lard, pork, margarine, etc., are all rationed under a general plan. The rations are estimated at about two-thirds of the normal food intake—bread at only one-half of the normal consumption; sugar only one-third, and butter only one-fifth. Under a new regulation, the bread ration of those whose incomes exceed \$1,620 per year is to be decreased. Although maximum prices have been established for many articles the populace is forced to trade outside the regular channels of distribution in order to obtain supplies in quantities sufficient to maintain strength. In these private transactions the fixed maximum prices are not observed. For example: Tea is selling for \$9.45 per pound, coffee for \$4.85, and flour for 45 cents. Beef, which before the war was 11 cents a pound, is now more than a dollar.

While no two authorities seem to agree on the

Ukrainian situation, none of them deny that it will present serious difficulties. Even with a surplus in the Ukraine, it is a foregone conclusion that every available scrap of food will be absorbed by Germany and Austria.

Even such a cursory examination of the European food situation must show that America will be forced to shoulder even heavier demands in peace times. We are now contributing to the support of 120,000,000 people within the borders of the Allied countries. With

the lowering of the barriers which separated us from the starving countries of Europe, there is an addition of at least 180,000,000 people, who are largely dependent upon us for the food which will save them from starvation.

We must face the grim fact that even with victory we must continue to save and to sacrifice. Failure to tighten our belts and to hold consumption to the barest minimum will place upon the hands of the American people the blood of those who cannot exist if we insist upon living in the lap of luxury.

"Egg Substitutes" Fail to Pass Test

SO-CALLED egg substitutes, examined for their physical fitness in relation to assertions made for them on the label, have been placed in deferred classification by the board that is taking up their cases through the Illinois Division of Foods and Dairies. "Under-development" is found to be one of the drawbacks which prevents them from being accepted for service in the same class with real eggs.

The test that is eliminating the weaklings from the physically fit is conducted in an electrically controlled and heated oven in the laboratory of the food department in the Kimball building. As soon as a new brand of egg substitute is placed on the market in this state, and the department hears of it, inspectors are instructed to obtain a sample. A batch of cake dough is then mixed, the egg substitute being used in strict accordance with directions on the label, and the baking begins. When the cake is done, it is taken from the oven, compared with other cakes and classified.

Under these conditions, every brand of egg substitute has got to give a good account of itself or drop such advertisements as, "gives better results than eggs," "one scant teaspoonful represents one fresh hen's egg," and similar representations. So far, exemption cards have been issued to every egg substitute registered by this method in comparing results obtained with real eggs.

The idea of dealing with the egg-substitute problem in this manner originated with John B. Newman, superintendent of the Division of Foods and Dairies of the Illinois Department of Agriculture. Mr. Newman recommended an actual baking test. It was simply a case of mixing the ingredients for an old-fashioned butter and egg cake, and comparing the cake baked with egg substitute with the one baked with real eggs.

The test was in charge of William Brinsmaid, acting State Analyst for the department, and the methods used and results obtained excited a great deal of interest in an address given by him recently before the Illinois Woman's Conservation Committee, 28 South Wabash avenue. To illustrate his work, Mr. Brinsmaid used an enlarged photograph of the different cakes.

After an introductory statement concerning the history of egg substitutes and reference to chemical and nutritional investigations conducted in other states, Mr. Brinsmaid said:

"Recently there has been a sudden increase in the number of these egg substitute compounds placed on the market accompanied by an extensive advertising

campaign with positive statements as to the value of the compounds compared with eggs. As a result, Mr. Newman, the head of our department, ordered an investigation. Samples were taken and analyses made to see if the material conformed to the labels and if these substitutes were a proper food material. The analyses showed that they consisted principally of starch, wheat flour, corn flour or meal with dried milk powder, some small quantity of powdered whole egg or egg albumen, and with or without baking powder material. Some contained artificial coloring.

"Some of the advertising matter that accompanied these substitutes and appeared on the label or otherwise was decidedly emphatic and explicit on what they would accomplish when used in the place of eggs."

Mr. Brinsmaid then quoted reading matter from the labels advertising the egg substitutes which were used in the baking test, and continuing, said:

"Now, such statements as these are quite definite and if stated on the label they must be borne out by the facts in order to comply with the law.

"For the purpose in hand we decided to subject these compounds to an actual baking test in order to learn how near the labels and advertising matter came to telling the truth. The following household recipe was selected:

One cup of sugar, $\frac{1}{2}$ cup of butter, $\frac{1}{2}$ cup of milk, 2 cups of sifted flour, 2 eggs, $\frac{1}{4}$ teaspoonful of soda, $\frac{1}{2}$ teaspoonful of cream of tartar.

"Stir the butter and sugar together and add the eggs, then the milk, then the soda, and mix well. Mix the cream of tartar with the flour and add last and beat thoroughly. Bake in buttered gem pans. Have the oven at 428° Fahrenheit and bake for 20 minutes.

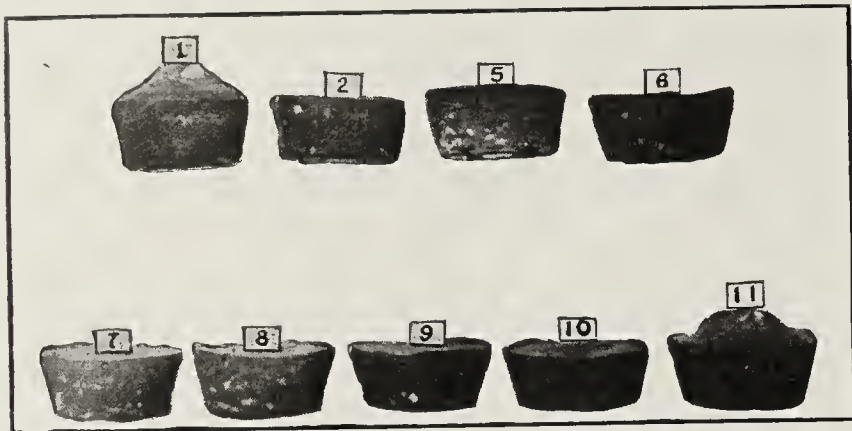
"In order to weigh and measure everything accurately for the purpose of this comparative test, we reduced this household recipe to a laboratory formula:

"Sugar, 200 grams; butter, 110 grams; milk, 120 c. c.; flour, 225 grams; soda $1\frac{1}{2}$ grams; cream of tartar, 3 grams. Bake at 220° Centigrade. This formula makes ten cup cakes.

"The material for each batch was accurately weighed and measured and all were baked at the same degree of heat. After the baking and the cakes were cold they were compared, the cake baked with eggs being used as a standard. This comparison was made by carefully laying the cakes on clean paper and cutting them with a clean knife. They were compared for texture, color, odor and flavor and any other differences, including size, oiliness of flavor, comparative sweetness

and general palatability. In scoring the cakes they are not eaten as ordinarily at the table, but portions of the cake are allowed to become thoroughly moistened with saliva while being worked over by the tongue, and any flavors noted.

"In comparing the results we will refer to the cakes as they are numbered on the illustration, which is a copy of the photograph taken at the completion of the baking.



"1. Cake Baked With Eggs.—The cakes baked with eggs were of good size, golden yellow in color, fine grained as to texture, moist but not in the least soggy, fine cake odor and delicious taste.

"2. Baked Without Eggs or Egg Substitutes.—Smaller than No. 1, top of cake flattened in contrast to the well rounded, fully developed cake in which real eggs were used.

"5, 6, 7, 8, 9. Baked With Advertised Egg Substitutes.—These cakes were rather soggy, coarse grained, poor in color, oily in flavor and with an intense sweet taste. The first impression given on tasting them was that of oiliness, not a bad flavor, but a decided oiliness without characteristic flavor. This was followed by the sweet taste so decided as to be disagreeable. Those baked with the substitutes containing artificial coloring matter had a somewhat faint disagreeable yellow tinge not in the least comparable to the color im-

parted by real eggs in No. 1. Those with substitutes containing no artificial coloring matter were almost white, the same as No. 2. With the exception of the artificial coloring, the cakes in this group were identical in character with No. 2. All were smaller than the one baked with eggs.

"10. Baked With a Substitute Containing 52% of Whole Egg Powder.—Scored the same as those baked with advertised egg substitutes in the foregoing group.

"11. Baked With 16 Grams of Whole Egg Powder for Each Egg Called for in the Recipe.—Larger, finer grained, and a better cake than the others with the exception of No. 1, and greatly inferior to the latter.

"The cakes in which substitutes were used in the place of eggs were in ALL points much inferior to the cake made with real eggs. In fact, as good results could have been obtained in the baking if we had left out the so-called egg substitutes. Cake No. 2 baked without eggs or egg substitutes in size shows up as well or nearly as well as its neighbors to the right, as you will notice in the photograph.

"The result of the test demonstrated conclusively that the statements on the labels of these various compounds were false and misleading, and to call them by a distinctive name that in any way suggested eggs was wrong. To correct this situation as it related to names and statements, cases were filed against the manufacturers and they were called in for a hearing. Nearly all of them responded at once and agreed to remove all objectionable names and statements and to replace goods now on the market with properly labeled packages. The new labels were submitted to us for approval before being used. I am glad to say in behalf of these manufacturers that they acted in a fair-minded manner in aiding us to correct these conditions and they accepted our decisions without protest. This work is now progressing satisfactorily and we hope in a short time to have all so-called egg saving substitutes with misleading names or statements removed from the market."

Public Hearing on Corn Meal Standards, December 3.

A public hearing to consider the advisability of adopting definitions and standards for corn meal and corn flour will be held by the Joint Committee on Definitions and Standards at 10 a. m., December 3, at the Bureau of Chemistry, United States Department of Agriculture, Washington, D. C. All persons interested are invited to attend and present pertinent facts. Those who desire may present their views in writing on or before the date of the hearing to the Secretary of the Committee, Bureau of Chemistry, Washington, D. C. The hearing will be held at 216 13th Street, S. W., Washington, D. C.

Products made from both whole corn and degerminated corn will be considered. The committee desires information concerning sterilization and other means of insuring a sound product under market conditions, and suggestions are desired on the rules that should be used in differentiating between sound and spoiled corn meal and corn flour.

The Joint Committee on Definitions and Standards is composed of representatives of the United States Department of Agriculture, the Association of American Dairy, Food and Drug Officials, and the Association of Official Agricultural Chemists.

Bureau of Plant Industry Produces New Fruit.

A new type of fruit, which has been named the tangelo, has been produced by the United States Bureau of Plant Industry through a cross between the tangerine orange and the grape fruit, or pomelo. As a class the tangelos resemble round oranges more than either of their parents and are exceedingly variable. Two well recognized varieties have been thoroughly tested and have been distributed to co-operators for further trial. The tangelo has little acidity and resembles a tender and good flavored orange more than a grapefruit or tangerine.

Scarcity of Spices in Canada Causes High Cost.

In Canada spice prices have risen sharply during the past year, and, even at that, importers find it difficult to obtain supplies in sufficient quantities to take care of the demand. Peppers, which a year ago sold at 35 to 38 cents for black and 38 to 45 for white, are now 44 to 46 cents and 50 to 55 cents a pound, respectively. Cloves are reported rather scarce and in moderate demand; prices which last year ranged from 40 to 55 cents are now 75 to 85 cents a pound. Allspice is in active demand in a rising market.

Stocks of nutmegs in first hands are small and poorly assorted; prices during the year have advanced

about 5 cents a pound. Gingers show little change, though Jamaicas are higher owing to brisk export demand which has depleted spot stocks; prices ranged from 25 to 35 cents a year ago and are now 30 to 40 cents. Paprika is higher in price due to existing conditions of transportation, the bulk of supplies coming from Spain with few bottoms available.

How to Make Apple Syrup.

Apple syrup is the latest product of conservation due to the chemist. After noting the large wastage in apple orchards, due to scarcity of help or unfavorable market prices, Dr. H. C. Gore of the United States Bureau of Chemistry, has been experimenting with apples, in the hope of discovering some cheap and effective way of conserving their food value without involving too much manufacturing and transportation. He announces two methods which are recommended to farmers generally and in some measure to housewives.

As described by J. J. Willaman of the American Chemical Society in a recent report of that organization, the first method is based on the well known fact that when impure water freezes, the ice becomes purer than the original water. That is, the crystals of ice, when forming, exclude the impurities, so that the crystals are almost pure water. It matters not what the impurities are. For fruit purpose the sugars, acids and flavoring matter of cider are impurities, and by freezing the cider these highly desirable impurities will be concentrated in the mother liquor.

The cider is slowly and with constant stirring subjected to a temperature below the freezing point; loose crystals of ice soon form, until the cider is "sugary" with them. The whole mass is then dumped into a rapidly revolving tub with perforated sides, called a centrifuge. It is very similar to the centrifugals used in separating the molasses from the granulated sugar in a sugar factory. As a result of the centrifugal force, the liquid portion of the cider is thrown out of the perforations and is caught in a surrounding drum, leaving the crystals of ice in the tub. By this process the cider becomes much concentrated; in fact, the process is continued until a cider syrup is obtained so concentrated in sugars and acids that it will not spoil when bottled, even without sterilizing. This syrup can be economically shipped, and is ready for dilution at any time into a beverage, which, to the uninformed, "was fresh from the tree just yesterday."

This method obviously can be used only in a factory, with machinery available. The other way of utilizing waste apples can, however, be very effectively followed in the home. This is a chemical treatment, in contrast to the purely mechanical treatment of the first method. The cider is boiled with calcium carbonate (obtainable at any drug store as a precipitated chalk) to destroy the acidity, and then boiled down to a syrup. Three-fifths of an ounce of the precipitated chalk is added to each gallon of cider, and the latter boiled vigorously for five minutes. This neutralizes the apple acids and converts them into insoluble calcium salts, which sink to the bottom of the vessel. After standing about five hours, preferably in tall containers, the clear juice is poured off from the sediment in the bottom and boiled down rapidly to a syrup, removing all scum.

The syrup, when sufficiently concentrated, boils at 220 degrees F.; it is about one-eighth the volume of the original cider. It is now bottled or put in mason

jars for sterilizing. Cotton plugs are placed in the bottles, and rubbers and covers put on the jars. The containers are submerged up to their necks in water in a boiler and heated at a boiling temperature for 15 minutes. Sterilized corks are immediately pressed into the bottles, and the covers of the jars screwed on tightly. If the whole outfit is allowed to cool slowly, the little sediment in the syrup will settle to the bottom and leave a clear, bright, delightfully "appley" syrup. This syrup contains all the sugars and flavoring matters of the cider, with the acidity removed. It is thus a mild fruit product obtained by a very simple chemical process. It cannot be diluted to a beverage successfully, as in this form it is too flat in taste without any acidity.

Home Grown Sugar Feeding the Nation.

Under the zone system of distribution adopted by the Food Administration the domestic industry is called upon to supply a greater portion of the country than ever before. Thirty-five states, comprising four-fifths of the total area of the United States, must depend upon sugar of home production from now until the end of the year. Much of this area will be supplied from the same source for a considerably longer period.

From the Pacific Coast eastward to the Buffalo-Pittsburgh line, home-grown beet sugar, aided by Hawaiian cane distributed through the San Francisco refineries, will provide the only supply available for this immense territory. In the South, from the Ohio River to the Gulf, the cane sugar of Louisiana must be the main reliance until the new crops of Cuba and Porto Rico become available. Even in the North Atlantic section it is noteworthy that domestic sugar, mainly from Hawaii, now constitutes more than half the total volume of deliveries.

The amount of home-grown sugar now coming forward to market by no means measures the full extent of the service rendered by domestic production. There is not a month of the year when sugar grown from our own soil is not contributing to the requirements of the American people. It is one of the elements of national economic strength, however, that sugar of domestic production comes forward in volume at just that season of the year when the output from other sources of supply is at low ebb. From now on, until well past the turn of the year, sugar grown from United States soil will feed two-thirds of the population of the country, and will mean for the nation as a whole a sufficient though restricted supply, instead of the absolute famine that would prevail except for the existence of the domestic sugar industry.

Short Volume Cans for Raw Oysters.

A large number of shipments of raw oysters packed in cans were found, during the past season, to be short of the volume declared on the container. Examination of the cans showed the capacity of these to be appreciably less, after the lid was inserted and the can ready for shipment, than the net volume stamped thereon by the maker. Since the Food and Drugs Act places the responsibility for interstate shipments of short volume products upon the shipper and not upon the manufacturer of the can, packers should take the precaution to see that those containers used by them, when filled and ready for shipment, actually contain the quantity of oysters declared.

RETAIL PRICES,

Average Price per Pound	Average Price per 100 Calories		Lima, Ohio (Typical Small Town)	Augusta, Me.	Buffalo, N. Y.	Trenton, N. J.	Providence, R. I.	Newark, Del.	Burlington, Vt.	Boston, Mass.	Pittsburgh, Pa.	Washington, D. C.	Cincinnati, Ohio	Lexington, Ky.	Richmond, Va.
CEREAL PRODUCTS															
6.5	.40	Wheat Flour, War Std., 49-lb. bag.....	310	320	314	352	330	325	368	343	320	330	320	335	320
7.8	.49	Rye Flour, Std., 24½-lb. bag.....	200	180	172	220	180	.....	196	172	176	175	150	160	.....
6.9	.42	Graham Flour, 10-lb. bag.....	70	70	70	70	75	.....	80	70	75	.....	60	65	.....
12.3	.74	Cornstarch, lb.	12½	10	10	12	12	12	15	10	9½	12	13	13	22
7.3	.46	Corn Flour, 5-lb. bag.....	40	35	35	40	38	45	50	35	60	35	30	41½	37
6.6	.41	Corn Meal, lb.	6	5	7	7	7	6	.....	6	6½	6	6	6½	6
7.6	.47	Barley Flour, lb.	8	7	7	7	7	10	9	7½	9	.....	6	8½	7
9.4	.52	Oatmeal, lb.	12	7	8	10	.....	8	8	7½	8	8	7	15	.....
8.7	.43	Oats, Rolled, Bulk, lb.	10	7	8	9	7½	8	8	7	8	8	7	15	12
12.9	.73	Rice Flour, lb.	15	15	20	15	13	14	8	13	12	12	12½	14	.....
11.1	.70	Buckwheat Flour, lb. ....	.....	.....	9	10	.....	.....	.....	9	12½	15	12½	14	8
9.4	.58	Hominy Grits, lb.	12	.....	10	10	7	.....	18	.....	8	14	8	10	8
11.4	.63	Quaker Oats, 20 oz.	13	13	15	14	13	13	15	11	12	.....	12	15	11
13.8	.87	Rice, Fancy Head, lb.	15	11	16	14	.....	15	15	13	16	.....	14	15	14
12.8	.79	Barley, Pearled, lb.	15	15	15	10	10	.....	10	8	9	10	10	10	15
9.7	.82	Bread, lb.	10	9	10	9	10	15	15	7½	8	9	10	10	10
24.0	1.26	Crackers, Graham, lb.	22	22	25	32	25	.....	20	22	14	19	22	40	25
24.7	1.29	Crackers, Oatmeal, lb.	22	30	25	32	25	.....	.....	24	14	19	22	40	20
14.0	.86	Macaroni, lb.	15	10	14	12	18	10	15	19	9	18	15	20	17
SUGAR AND SIRUP															
10.7	.59	Granulated Sugar, lb.	11	11	10½	10½	9	10½	11	10	11	10½	10½	11	10
8.5	.59	Corn Sirup, 10-lb. pail.....	90	75	75	95	80	100	125	.....	90	75	80	85	80
37.5	2.53	Comb Honey, lb.	35	.....	38	.....	50	.....	38	64	30	.....	40	40	.....
MISCELLANEOUS															
36.3	1.61	Cocoa, Bulk, lb.	30	.....	25	30	29	.....	.....	25	30	38	25	50	.....
43.9	7.31	Eggs, Fresh Gathered, firsts.....	60	65	70	84	.....	62	70	65	62	70	63	60	50
7.1	2.29	Milk, qt.	13	12	16	16	17	13	.....	16	15	17	14	16	30
39.5	1.85	Cheese, American Cheddar.....	45	35	37	38	35	40	35	33	36	38	40	38	.....
FATS															
60.3	2.55	Bacon, Sliced, lb.	60	45	60	55	60	60	65	55	60	58	55	65	50
65.0	1.86	Creamery Butter, Fancy, lb.....	63	65	66	72	64	.....	70	56	64	65	65	64	60
33.7	.82	Pure Leaf Lard, lb.	35	32	35	35	41	35	35	33	32	36	32	38	30
38.3	1.12	Oleomargarine, Uncolored, lb.	40	39	38	37	36	40	38	34	36	38	39	35	30
36.8	1.05	Nut Margarine, Uncolored, lb.....	35	35	34	37	35	.....	38	34	34	38	38	40	30
111.4	2.79	Italian Spanish Olive Oil, qt. tin.....	250	.....	165	280	200	.....	250	190	200	220	225	275	.....
36.1	.90	Cottonseed Oil, qt. tin.....	75	.....	60	75	80	.....	.....	70	90	.....	75	90	.....
37.0	.92	Corn Oil, qt. tin.....	75	.....	80	75	75	.....	75	72	80	75	75	75	70
42.3	1.06	Peanut Oil, qt. tin.....	75	.....	100	105	.....	.....	.....	120	.....	.....	.....	.....	.....
31.0	1.13	Peanut Butter, lb.	30	25	27	28	35	.....	30	23	25	24	30	30	30
FRUITS															
20.5	1.55	Evaporated Apples, lb.....	25	.....	20	25	.....	.....	.....	23	.....	.....	.....	15	.....
19.2	1.60	Evaporated Peaches, lb.	18	.....	18	20	.....	18	20	18	22	.....	20	25	10
16.6	7.90	Canned Peaches, No. 2½, Std., 29 oz....	40	25	25	30	35	28	35	33	30	30	25	30	20
17.9	2.56	Canned Pineapples, No. 2½, Std., 30 oz..	40	30	35	38	35	40	35	35	35	35	35	35	30
16.3	1.04	Raisins, Seeded, pkg. 15 oz.....	18	15	15	16	15	15	15	15	15	15	15	15	10
18.3	1.58	Prunes, Medium Size, lb.....	25	17	18	23	21	18	20	13	15	20	20	20	10
VEGETABLES															
3.1	1.03	White Potatoes, lb.	3	2½	2¾	3½	3½	2	2	3½	3	4	3	4	.....
5.7	1.27	Sweet Potatoes, lb.	8	3½	6	5	5	10	5	5	6	7	5	4	.....
3.8	1.90	Onions, lb.	5	4	3	3	3½	6	7	3	2	4	3	4	.....
16.1	1.02	Navy Beans, Dry, lb.....	17	.....	18	15	16	18	18	15	12½	15	14	16	10
15.8	17.55	String Beans, Canned, No. 2, Std., 19 oz..	20	18	19	18	16½	20	22	15	16	15	18	15	20
15.3	3.48	Corn, Canned, No. 2, Std., 20 oz.....	15	18	17	21	22	20	22	15	18	20	16	25	10
15.5	6.20	Peas, Canned, No. 2, Std., 20 oz.....	18	18	17	21	20	20	25	15	16	25	18	25	10
16.3	1.01	Split Peas, lb.	15	17	18	14	13	.....	20	13	7	20	15	20	10
24.4	1.31	Peanuts, Unshelled, lb.	25	.....	40	.....	24	.....	25	25	22	25	25	.....	.....
10.4	10.41	Tomatoes, Canned, No. 3, Std., 33 oz....	25	18	22	22	20	25	22	24	22	.....	23	25	20
3.7	3.08	Cabbages, lb.	5	3	3	4	3	6	6	4	2	3	3	3	.....
3.9	2.29	Beets, lb.	5	3	2½	4	5	.....	5	4	3	.....	3	4	.....
3.7	2.06	Turnips, lb.	5	3	3	4	4	.....	5	4	3	6	3	3	.....
MEATS AND FISH															
36.3	5.58	Beef, Round Steak, lb.....	40	40	38	45	.....	48	55	36	30	45	30	40	.....
42.4	8.48	Veal Cutlets, lb.	45	35	35	60	.....	55	60	100	40	60	40	34	.....
34.1	3.92	Leg of Mutton, lb.	35	.....	.....	35	.....	.....	40	.....	38	.....	25	30	.....
38.1	4.54	Leg of Lamb, lb.	45	35	32	38	.....	.....	40	36	38	40	35	35	.....
43.4	3.53	Pork Chops, lb.	40	42	45	45	.....	48	45	50	40	50	35	38	.....
56.7	2.98	Ham, Sliced, Medium Fat, lb.....	60	45	.....	60	70	60	60	60	60	50	55	50	40
46.0	15.86	Chickens, Broilers, lb.	35	35	42	55	.....	50	55	50	45	45	38	45	40
28.8	8.00	Salt Cod, lb.	25	28	24	35	34	.....	30	24	22½	35	30	30	20
27.6	2.76	Salt Mackerel, lb.	25	24	32	30	28	20	30	30	20	.....	30	30	20
33.6	7.47	Halibut, lb.	35	.....	35	50	.....	.....	40	45	30	35	30	30	.....
31.2	4.87	Salmon, lb.	35	.....	32	50	.....	.....	50	30	30	35	25	32	20
30.8	4.67	Salmon, Canned, No. 1, Tall, 1 lb.....	30	25	30	30	25	25	30	30	35	30	30	35	.....
30.0	8.11	Trout, lb.	35	.....	22	.....	.....	.....	.....	75	20	25	25	30	.....
23.6	7.38	Whitefish, lb.	25	.....	25	.....	.....	.....	.....	18	25	.....	28	22	.....

VEMBER 1, 1918

	Atlanta, Ga.	Montgomery, Ala.	Birmingham, Ala.	New Orleans, La.	Little Rock, Ark.	Topeka, Kans.	Chicago, Ill.	Indianapolis, Ind.	Detroit, Mich.	Madison, Wis.	Des Moines, Iowa	Fargo, N. Dak.	Siox Falls, S. Dak.	Reno, Nev.	Denver, Colo.	Tucson, Ariz.	Boise, Idaho	Berkeley, Calif.	San Francisco, Cal.	Portland, Ore.
08	325	324	350	392	310	295	285	299	320	292	320	290	320	310	285	325	275	315	315	305
79	172	165	.....	196	160	195	145	285	160	142	160	170	195	225	150	385	175	185	181	175
75	80	85	.....	80	40	75	65	59	65	60	65	30	80	75	60	70	75	72	75	65
5	12	15	15	15	10	11½	10	10	10	10	10	11	15	12	12½	10	12½	13	12½	11
35	35	28	.....	40	30	30	30	33	35	33	35	34	40	44	30	40	40	45	47½	42½
6	5½	5½	5½	6	5½	5¾	5	6	.....	6	7	7	7½	7½	6	7½	7½	7½	15	7½
8	.....	9	.....	8	7	6	5	8	11	6	6	7	7½	7	6	8	8	7½	7½	8
.....	10	8½	15	7½	9	.....	10	8½	8	.....	10	9	10	12	8	.....	8½	11	11	8
.....	10	8½	.....	7½	9	7½	8	8½	7	11	7½	.....	.....	12	10	5	8	9	9	8
12½	.....	.....	.....	10	18	10	12	13	15	12	12½	12	12½	12	7	15	12	11	11	12½
6½	7½	7	15	7	14	8	7	8	9	10	8	.....	10	8	7½	10	7½	9	10	8
15	12	15	15	12	12	15	12	15	12	14	15	.....	18	15	15	15	15	13	12½	15
3	12½	12½	15	12	13	15	13	15	13	13	15	12	15	14	12½	.....	15	13	14	13
5	.....	16	15	10	15	10	12	15	8	12	10	10	15	13	20	20	20	11	12½	10
0	10	12	.....	10	9	9½	10	10	7½	9	10	14	10	10	8	10	10	10	10	10
5	35	.....	.....	25	22	20	22	23	18	22	18	19	36	32	20	17½	25	25	25	18
5	35	.....	.....	25	22	20	22	35	20	22	18	19	36	32	20	17½	25	18	25	20
0	15	10	.....	10	12	15	15	.....	20	24	12	12	.....	12	6	10	10	12½	11	11
11½	10½	10½	11	10½	11	11½	10½	11	9	11	11	10½	11	11	11	11	11½	10½	10	10½
15	79	15	90	100	70	92½	75	79	90	85	85	85	100	93	85	110	100	100	105	100
.....	35	25	30	40	25	35	40	33	40	45	40	40	50	25	45	40	30	35	30	40
0	35	50	.....	35	35	35	25	25	25	30	40	29	50	48	40	.....	30	.....	.....	30
5	58	55	60	56	55	55	65	60	62	55	60	50	55	90	65	75	60	93	94	75
20	20	20	.....	18	18	13	15	12	14	.....	15	13	13	15	13	18	15	13	14	16
4	40	40	45	43	42	40	40	43	32	.....	40	35	45	35	40	40	40	38	38	40
0	60	60	65	50	60	60	60	55	50	68	60	.....	60	65	60	75	65	65	70	55
6	58	66	67	66	65	63	65	65	62	62	63	60	65	69	63	74	65	65	68	70
5	30	35	35	30	33	33½	33	35	30	.....	35	32	35	35	30	35	30	33	33	32
5	40	39	45	39	33	37½	38	41	38	40	35	36	35	40	35	.....	40	40	42	40
0	35	39	40	37	38	35	37	38	36	35	35	35	37	.....	35	.....	45	38	38	40
0	.....	185	.....	175	175	165	180	325	250	200	250	.....	225	195	175	190	150	175	175	225
35	75	74	.....	50	39	85	70	.....	45	.....	70	.....	75	85	100	.....	75	65	60	75
0	75	40	.....	70	34	75	70	79	40	70	75	65	75	85	75	45	75	75	73	75
5	.....	.....	.....	70	35	.....	75	.....	75	.....	.....	.....	.....	.....	75	.....	75	.....	.....	.....
0	30	30	35	35	25	30	25	30	25	30	40	28	30	30	30	40	40	30	30	25
0	17½	23	25	20	20	.....	25	20	20	.....	20	19	.....	18	20	25	20	15	25	17
5	20	20	20	20	20	20	18	20	20	.....	25	20	18	14	15	25	15	12½	19	17
5	35	40	35	30	25	37½	30	30	30	.....	25	22	25	30	30	30	35	25	25	25
0	35	30	40	30	35	40	30	33	35	25	30	.....	30	28	35	30	30	30	30	25
8	18	20	15	15	15	16½	15	15	15	15	12½	12	15	14	15	20	15	12½	14	12½
0	20	20	20	20	14	17½	18	20	18	20	12½	15	18	18	15	20	17½	20	20	14
5	3½	4	4	4½	3	3	2½	3	2½	2¼	2½	2	2	2	3	3½	2	4	3	2½
6	3¾	3	5	6	4	3½	7	7	5	8	5	5	8	5	6¼	7½	6	5	7½	5
6	4½	5	5	4	4	5¼	4	4	2	3	2½	2½	5	2½	3	3	2½	3	4	2½
0	12½	20	20	15	14	16½	15	15	15	12	17	15	18	16	20	17½	15	16	16	12½
0	20	25	17½	20	18	20	20	15	18	20	20	15	20	20	20	15	.....	20	20	20
0	20	20	25	20	18	17½	20	18	18	18	15	19	20	15	17½	15	20	20	25	20
5	25	30	20	18	18	20	20	20	18	15	15	15	18	15	17½	20	20	20	17	20
0	.....	18	.....	15	7	.....	14	20	15	.....	.....	17	.....	14	20	15	15	15	18	12½
.....	.....	6½	12½	.....	18	.....	25	.....	25	.....	25	25	.....	30	25	.....	30	.....	30	25
5	20	15	20	20	21	23½	23	25	20	25	20	17	22	25	20	20	20	20	20	20
5	3½	5	5	6	4	3¼	3	4	3	1	4	.....	4	2½	1½	7½	2½	2½	3	4
0	6	7	.....	6	4	3⅓	3	.....	2	2	4	.....	2	2½	2	7½	2½	2½	3	2½
6	3½	7	.....	7	4	2½	3	3	2	2	3	.....	3	2	2	7½	2½	2½	3	2½
8	25	30	35	35	40	32½	38	40	30	28	35	30	33	32	30	35	.....	30	30	25
0	30	35	40	38	40	40	35	60	40	32	35	30	33	40	40	45	.....	35	30	25
0	40	40	40	32	35	37½	28	.....	34	25	40	30	30	28	25	45	.....	36	30	28
5	40	40	40	37	40	42½	40	50	34	32	40	35	40	35	30	.....	.....	35	35	35
0	40	45	45	47	45	37½	45	43	40	38	45	30	42	45	40	50	.....	45	40	45
5	45	50	50	50	60	60	55	57	50	50	60	55	52	60	60	55	.....	70	65	60
0	45	40	50	45	45	40	35	33	37	31	38	33	.....	50	40	.....	.....	60	75	45
0	.....	25	.....	29	40	30	30	30	30	25	25	.....	33	30	30	.....	.....	25	25	22½
.....	35	40	17½	25	35	30	25	30	30	.....	35	35	33	12½	20	.....	.....	30	18	.....
.....	.....	.....	.....	.....	35	30	30	30	30	28	35	35	35	35	35	.....	.....	30	30	25
.....	24	.....	25	25	35	28	30	30	30	28	35	35	35	30	35	.....	.....	22	25	25
5	35	40	35	20	38	33½	30	35	28	30	40	.....	30	30	35	.....	30	30	20	.....
.....	25	25	.....	20	35	.....	28	30	25	28	35	.....	.....	.....	35	.....	.....	.....	.....	30
.....	20	.....	20	17½	35	.....	28	30	30	28	25	25	.....	.....	35	.....	.....	6	5	25

"New Fish" in American Markets Are in Reality Old Fish*

By DR. H. F. MOORE,
Deputy Commissioner, U. S. Bureau of Fisheries.

A "NEW FISH" in the markets may be a real novelty disclosed by actual discovery, or an "old fish" which suddenly makes its appearance in a new region, or after a prolonged period of absence, or it may be a species long resident and well known to the fishermen, but not used on account of prejudice or ignorance of its qualities. Examples of all these are to be found in the market lists of today, which record a number of fishes not formerly generally used, the mention of some of which may surprise even the elders of the fish trade.

A classic example of the really new is the tilefish, which has the remarkable record of having been discovered practically exterminated, gradually re-established in its old home, placed on the market and made known from Seattle to London, all within the space of about 35 years. This is a sufficiently extraordinary history, but there is a possibility that it may be added to. It may be recalled that in 1882, three years after its discovery, this fish was destroyed to an estimated extent of 1,400,000,000 individuals, presumably by the retreat of the Gulf Stream offshore from its former course. Its warm waters no longer touched the bottom and the tilefish, a bottom feeder and warm water dweller, was in effect confronted with the dire alternatives of remaining on the bottom, where the water was too cold, or migrating nearer to the surface, where there was no food. The investigations of the Bureau of Fisheries showed that in 1916 the inner edge of the Gulf Stream was considerably further offshore than in previous years, and that the bottom waters were much colder off New York and the coast of New Jersey. No examination was made in 1917, but, if the recession of the Gulf Stream should continue, history may repeat itself and the tilefish may again be driven off or destroyed.

Of the second class of new fishes a typical example is the blue fish, now one of the best known and highly esteemed of food fishes. The early chroniclers of the New England and Middle Atlantic coasts make frequent mention of its great abundance and excellence, but about the time of the American revolution it seems to have disappeared utterly from its old haunts, and was known no more until well along in the first quarter of the nineteenth century. When it reappeared it was as strange and unknown to even the oldest fishermen of some regions as if it had been an importation from Mars. It is an interesting coincidence, if no more, that the scup, which for a number of years had been scarce on the New England coast, again became abundant soon after the disappearance of the bluefish, which feeds on it extensively in some localities. The scup, also, was at one time a new fish in the markets.

These, however, are comparatively rare and exceptional cases. The new fish of the markets are in most cases those of the third class mentioned in the opening paragraph of this article; species well known to the fishermen, but for some cause or another neglected by

the consumers, and consequently by the fish trade. The historical and economic reasons for this neglect are intelligible. When the country was first settled, and for long afterward, the fish-eating population was small and confined to a narrow fringe along the coast. The fresh fish trade was local and readily supplied and it was natural that it should have been confined largely to the kinds of fish commonly used in the mother-lands and to those most nearly resembling them—the cod, the mackerel, the halibut, the herring, the shad and others. The supply of these was ample to meet the relatively small demand, but with the growth of population in the interior, the improvement of communications and the development of icing and refrigeration, other fishes began to enter into consumption, first in the fishing communities, whence the better known and higher priced kinds were shipped, and where the often equally good but not readily marketable kinds were recognized for their intrinsic worth and eaten. Although ice had been used on vessels engaged in the fisheries for a decade or two before, it was not until about 1860 that it was employed in the preservation of fish in railroad transportation, and from that year the fresh fish trade with interior points may be dated as a growing business.

It may be a surprise to some to learn that the haddock, which long has been one of the staple fishes of the markets, was at one time held in little esteem. Very old fishermen have told me that in their early boyhood most of these fish taken in connection with the fishery for cod were thrown away, and Lorenzo Sabine, who wrote one of the most entertaining of books on the fisheries, said in 1853 that "The hake and haddock are poor fish, and neither commands more than half the price of the cod. The haddock, when fresh, suits the taste of some; but when dried it is without reputation even in the hut of the negro, who is doomed to be its principal consumer." At that time the few haddock marketed were all caught in the shore fisheries, and eleven years later much amusement and no little derision were excited among the fishermen and dealers of Gloucester when an enterprising captain placed an able schooner in the fishery. This venture is said to have been "very successful," although the fares were sold at the incredibly low price of "75 cents per hundred fish." Nothing succeeds like success, and, as has happened in the fisheries more than once since that time, the critics forgot that they had ever criticised, and before many years the haddock fleet was an important one, including many of the finest fishing vessels afloat.

The development of the practice of icing and refrigerating fish in transport, and the introduction of smoking and kippering, about 1860, gave an impetus to the fishery, and the haddock has long ceased to be a new fish in any sense of the term, about 60,000,000 pounds being marketed annually at a price little below that commanded by the cod.

The history of the whiting, more recently, is paralleling that of the haddock. Every person familiar

* *Fishing Gazette*, July 13, 1918.

with the fisheries of New England knows that this fish is caught in vast numbers in pounds, traps and nets and has been, even as late as last summer, thrown away in quantities sufficient to feed a large population. In localities on the coast of Maine I have seen fishermen abandon their calling for the time being because of the abundance of this fish, regarded as having no market value.

In 1889 but 126,089 pounds of whiting were marketed, and in 1893 the Bureau of Fisheries made some effort to bring it into more general use. The attempt did not meet with immediate success, but fifteen years later the consumption had increased to over 10,000,000 pounds annually, mostly fresh and frozen. During the year 1917, largely as a result of the "eat more fish" campaign waged by the Bureau, the Food Administration and others, the use of whiting has increased enormously, but the incidental supply, taken in connection with fisheries for other species, has not been fully availed of, and during the summer large quantities were thrown away at the fisheries owing to a shortage of labor in some localities and to a failure to appreciate the opportunity in others.

The whiting is an excellent fish when fresh from the water, but softens quickly when iced in the ordinary way. It must be frozen or cured promptly, and many localities where it abounds are not provided with freezers. If the fishermen of the smaller and more remote communities would appreciate that it makes a high grade pickled fish and would cure it, they would not only benefit financially but would perform an important service to the country in increasing the food supply. Some preliminary work of the bureau resulted in a considerable demand for pickled whiting, unsatisfied because the demand for the fresh fish curtailed the supply. If the fishermen remote from fresh fish markets will undertake to pack a good pickled product, it will find a ready market.

There are many other fish now regarded as staples which have attained their present recognition only by slow steps, but of these it is not necessary to give further instances. The importance of the cases cited lies solely in making the point that because a fish is not used, neither the trade nor the consuming public is warranted in concluding that it is not fit for use. The essential thing in the emergency in respect to food in which the country finds itself is that no new thing should be neglected merely because our fathers knew it not. There are many of these new fish now on the market, or soon to appear, and the public should be made familiar with their names as one of the greatest impediments to the introduction of new fish is that the public's vocabulary of fish names is limited, and it knows not what to ask for. The retail fish trade has an excellent opportunity to help the national cause by educating the consumer and exercising salesmanship in behalf of these lower priced fish, without interfering with the sale of the standard and well known kinds. There is demand enough for all.

The larger sharks are good as food and are obtainable in limited quantities fresh, smoked and salted. In response to a consistent demand, the supply of sharks can be greatly increased, as they are abundant everywhere on the coast, particularly during the warmer months. Prospective consumers should not think that they are facing a novel experiment, for these fish have been eaten in many parts of the world for centuries, and no small number of persons in this country have tried them with satisfaction.

The skates and rays afford another large potential food supply. Structurally these fish may be described, roughly, as sharks flattened in adaptation to life on the bottom. There are many different kinds, some of them very abundant, on all of our coasts, and they feed largely, some of them destructively, on oysters, clams, mussels, crabs and other shellfish.

The edible part of the skates is restricted practically to the pair of great lateral fins or "saddle," which consists of a thick plate of excellent meat, something like halibut, devoid of bones. Skates are eaten extensively, and are highly regarded in Europe and need but to be known to be appreciated in the United States.

One of the most highly regarded fish of the Atlantic coast is the shad, and its relative, the herring, is one of the most valuable of seafoods. Another relative, the menhaden, is practically unknown to the public as a food, although it is caught in enormous quantities for the manufacture of oil and fertilizer. The Bureau of Fisheries has demonstrated that menhaden are excellent smoked and pickled, and, particularly in the first state, they have been received with approval by the patrons of the principal hotels and other discriminating users in North Carolina. A few persons have known that these fish, fresh, have good food qualities, and many fishermen use them in preference to the common market species. A small public demand has been developed, and with the return of the schools to the coast in the spring there will be presented for consumption a low-priced fish of merit. About 400,000,000 pounds are taken annually, a quantity equal to nearly 65 per cent of all food fish taken on the Atlantic coast. If any considerable proportion of these fish could be utilized as food, the public would be enabled to "eat more fish" without greatly increasing labor requirements or competing for the present catch of the ordinary market species.

There are many other fish caught incidentally in considerable numbers in the Atlantic coast fisheries and thrown away. At certain seasons large quantities of sea robins are taken, and, if used at all, employed in the manufacture of fertilizer. They are particularly good to eat, with firm, rich, white flesh, and exceptionally free from bones.

The black drum, a large and rather coarse looking fish, occurs in large schools which are sometimes very destructive to the oyster beds. Very few are eaten, though sometimes taken in numbers in the pound nets.

The black grouper is one of the most abundant fish of the Gulf coast, but has been in such little demand that, until recently, it has been the custom to limit the quantity accepted by dealers from the fishermen, who catch it when fishing for snappers. The demand for this fish has increased in the last year but as a potential source of excellent food its possibilities are yet untouched.

In the fisheries of the New England and Middle Atlantic coasts large quantities of goosfish are taken, the quantity being estimated at not less than 10,000,000 pounds annually. This is thrown away, while the world is in straits for food. The enormous head of this fish detracts from its commercial value, but when beheaded, the remainder has been shown by analysis to have a food value higher than the cod. It is eaten and highly regarded in some parts of Europe. Why not here?

The rosefish is another excellent, and, withal, attractive looking fish taken in considerable quantities by the

otter trawlers, and practically unused. On the Pacific coast there are a number of nearly related fish variously known to the fishermen as "red cod," "rock cod," "red snapper," etc., which are equally good and equally disregarded. If those caught and thrown away were utilized, they would make an appreciable addition to our food supply. Another Pacific coast fish which is now coming into its own in public esteem is the sablefish, erroneously known as "black cod" prior to the Bureau of Fisheries campaign to bring it into use. This is a remarkably rich fleshed fish with a high fat content, which makes it particularly valuable when the conservation of the ordinary food fats is important. This fish is now obtainable in many parts of the country fresh, frozen, smoked and pickled.

The eulachon, sometimes erroneously called "Columbia River Smelt," is also an exceedingly fat fish, probably the fattest of all, but whose fats are peculiarly digestible. Dr. David Starr Jordan describes it as "the finest food fish in the world," yet it has been almost neglected by the fish trade and the public, notwithstanding that it occurs at certain seasons, in extraordinary abundance, under conditions that make its capture easy. The Bureau of Fisheries is now making an effort to bring it into consumption and on application will endeavor to put dealers in touch with a source of supply.

These are only a few of the available but neglected fish. Examples might be multiplied, but it will suffice to say that practically all fish are edible and that in general they are equally nutritious, the chief difference in that respect being in the fat content, which varies not only with the species, but seasonally.

There is now an unusual opportunity to "put over" many new fish, which, if fully availed of, can be made to increase the fish supply fully 50 per cent without throwing material additional burden on the fisheries. With the co-operation of fishermen, dealers and the several food administrations and like organizations, some of these are appearing in the markets.

In conclusion, let me add one note of warning. There is a tendency to give some of these fish fictitious and fanciful names. Whiting is being sold as "winter trout" and hake as "ling." The bad ethics of this is plain, but there is another consideration. Some day the pure food authorities will awaken to what is going on and a stop will be put to the practice. Then the market for "winter trout" will be lost and will have to be built up anew under a more correct name.

Increased Cost of Vinegar.

Vinegar has reached the highest price level in history. The increased costs of ingredients used in the making and the cost of operation are given as the causes. Cider vinegar of the best quality is retailing at 50 cents a gallon, and the grain product is selling at 40 cents. Whereas, cider and grain vinegar, in normal times, sold wholesale at 16 and 10 cents a gallon, the wholesale prices of the products are now 35 and 18 cents, respectively.

The expensiveness of cider vinegar as compared with grain vinegar has caused users to turn to the latter product.

The majority of receipt books say to use cider vinegar, although manufacturers and culinary experts say that the grain or distilled product is more wholesome and is less expensive. The product made from apples has the superiority in taste. Government regula-

tions call for a 2 per cent content of apple solids in cider vinegar.

In preserving, the grain variety is the more desirable, according to local experts, for it does not produce "mother" in canning operations while the cider variety does.

The process in both cases is fermentation, the dextrose (sugar) in the apple juice and the grain mash is transformed through chemical action to alcohol and then acetic acid. The grain vinegar is the purer, for often apples used in the manufacture of cider vinegar are not of the best quality.

Sweetness of Invert Sugar.

Use of the superior sweetening power of invert sugar over the ordinary form is suggested by J. J. Willaman, of the Minnesota branch of the American Chemical Society, as a means of conserving sugar and making the available supply go farther in the present emergency. Mr. Willaman points out that conversion of common white sugar into the invert form is a simple process, and that the product thus obtained is about thirty per cent sweeter than ordinary cane or beet sugar, weight for weight.

This increase in sweetness results from the chemical process whereby the sucrose of the ordinary sugar is converted into equal parts of glucose and fructose. The latter, which is the characteristic sugar of ripe fruits, is sweeter than sucrose, or than glucose, which is the sweetening component of corn syrup. Mr. Willaman says:

"One hundred pounds of cane sugar make 105.24 pounds of invert sugar, which has the same sweetening power as 135 pounds of cane sugar. So it can be readily seen that the conversion of cane sugar into invert sugar is an economy in sweetening. It has no more food value than the sucrose, but the use of the latter as a food is almost always a secondary consideration.

"The inversion of sugar is a very simple matter and is brought about when it is boiled with an acid. In fact, inversion takes place to a considerable extent in the making of jelly. For many purposes confectioners and manufacturers of jellies and jams boil their sugar with tartaric acid or even cream of tartar in order to invert it. Commercial invert sugar is made by means of acid, but the latter is not detectable in the syrup.

"To make invert sugar take ten pounds of granulated sugar, four and one-half pints of water and one-fifth ounce of tartaric acid (obtainable at any drug store) and boil slowly in a covered kettle for about thirty to thirty-five minutes. If boiled longer the syrup begins to darken in color and develop a taste like corn syrup. The result is fourteen pounds of syrup from the ten pounds of sugar and, weight for weight, the two are equivalent in sweetening power. The syrup can be used for sweetening all sorts of cooking, fruits, cereals, ice cream, etc., although it may not be relished in coffee. It must be borne in mind that this syrup must be substituted for granulated sugar, weight for weight, and not volume for volume, since about three-quarters of a cup of syrup is equal to a cup of sugar.

"The one minor objection to invert sugar is that it cannot be obtained in dry form. It is estimated that in spite of the extra manufacturing cost, the same sweetening power can be bought as cheaply in the form of invert sugar as in the form of granulated sugar."

Review of Food Prices During the War

By HERBERT HOOVER

WITH the war effectually over we enter a new economic era and its immediate effect on prices is difficult to anticipate. The maintenance of the embargo will prevent depletion of our stocks by hungry Europe to any point below our necessities, and anyone who contemplates speculation in food against the needs of these people can well be warned of the prompt action of the Government. The prices of some food commodities may increase, but others will decrease, because with liberated shipping accumulated stocks in the Southern Hemisphere and the Far East will be available. The demands upon the United States will change in character but not in volume.

The course of food prices in the United States during the last fifteen months is of interest. In general, for the first twelve months of the Food Administration the prices to the farmer increased, but decreased to the consumer by the elimination of profiteering and speculation. Due to increases in wages, transportation, etc., the prices have been increasing during the last four months.

The currents which affect food prices in the United States are much less controlled than in the other countries at war. The powers of the Food Administration in these matters extend:

First, to the control of profits by manufacturers, wholesalers and dealers, and the control of speculation in foodstuffs. They do not extend to the control of the great majority of retailers, to public eating places, or the farmer, except so far as this can be accomplished on a voluntary basis.

Second, the controlled buying for the Allied civil populations and armies, the neutrals and the American army and navy, dominates the market in certain commodities at all times, and in other commodities part of the time. In these cases it is possible to effect, in co-operation with producers and manufacturers, a certain amount of stability in price. I have never favored attempts to fix maximum prices by law; the universal history of these devices in Europe has been that they worked against the true interests of both producer and consumer.

The course of prices during the first year of the Food Administration—that is, practically the period ending July 1, 1918, is clearly shown by the price indexes of the Department of Agriculture and the Department of Labor. Taking 1913 prices as the basis, the average prices of farm produce for the three months ending July 1, 1917, were, according to the Department of Agriculture's price index, 115 per cent more than the average of 1913 prices, and according to the Department of Labor index, it was 91 per cent over 1913 prices. The two departments use somewhat different bases of calculation. The average of farmer's prices one year later—that is, the three months ending July 1, 1918, was, according to the Department of Agriculture indexes, 127 per cent over the 1913 basis, and, according to the Department of Labor index, was 114 per cent over the 1913 average. Thus farm prices increased 12 per cent on the Department of Agriculture calculations and 23 per cent upon the Department of Labor basis.

An examination of wholesale prices—that is, of prepared foods, shows a different story:

The Department of Agriculture does not maintain an index of wholesale prices, but the Department of Labor does, and this index shows a decrease in wholesale prices from 87 per cent over 1913 basis to 79 per cent over the 1913 basis for the three months ending July 1, 1917, and July 1, 1918, respectively. The Food Administration price index of wholesale prices calculated upon still another basis shows a decrease of from 84 per cent to 80 per cent between these periods one year apart.

Thus all indexes show an increase in farmers' prices and a decrease in wholesale prices of food during the year ending July 1, 1918. In other words, a great reduction took place in middlemen's charges, amounting to between 15 per cent and 30 per cent, depending upon the basis of calculation adopted. These decreases have come out of the elimination of speculation and profiteering.

The course of retail prices corroborate these results also. Since October, 1917, the Food Administration has had the services of 2,500 weekly voluntary retail price reporters throughout the United States. These combined reports show that the combined prices per unit of twenty-four most important foodstuffs were \$6.62 in October, 1917. The same quantities and commodities could be bought for \$6.55 average for the spring quarter, 1918—that is, a small drop had taken place. During this same period of quarters ending July 1, 1917, to July 1, 1918, the prices of clothing rose from 74 per cent to 136 per cent over 1913, or a rise of about 62 per cent, according to the Department of Labor indexes.

Since the spring quarter, ending July 1, 1918, there has been a rise in prices—the Department of Agriculture index for September showing that farm price averages were 138 per cent over the 1913 basis, and the Department of Labor index showing 136 per cent, or a rise from the average of the spring quarter this year of 11 per cent and 22 per cent respectively to the farmer. The wholesale price index of the Department of Labor shows a rise from 79 per cent average of the spring quarter, 1918, to 99 per cent for September, or a rise of 20 per cent. The Food Administration wholesale index shows an increase from 80 per cent to 100 per cent, or 20 per cent for the same period.

In October, 1918, the Food Administration retail price reports show that the retail cost of the same quantity of the twenty-four principal foodstuffs was \$7.58 against an average of \$6.55 for the spring quarter 1918, or a rise of about 18 per cent.

It is obvious enough that prices have risen during the last three months, both to the farmer and to the wholesaler and retailer. On the other hand, these rising prices have only kept pace with the farmers' prices.

Since the first of July this year, many economic forces have caused a situation adverse to the consumer. There has been a steady increase in wages, a steady increase in cost of the materials which go into food production and manufacture, and in containers and supplies of all kinds. There has been an increase of 25 per cent in freight rates. The rents of the

country are increasing and therefore costs of manufacturing, distribution and transportation are steadily increasing and should inevitably affect prices. The public should distinguish between a rise in prices and profiteering, for with increasing prices to the farmer—who is himself paying higher wages and cost—and with higher wages and transport, prices simply must rise. An example of what this may come to can be shown in the matter of flour. The increased cost of transportation from the wheat producing regions to New York City amounts to about 40 cents per barrel. The increased cost of cotton bags during the last fourteen months amounts to 30 cents per barrel of flour. The increase in wholesalers' costs of drayage, rents, etc., amounts to 10 cents, or a total of 80 cents, without including the increased costs of the miller or retailer.

Such changes do not come under the category of profiteering. They are the necessary changes involved by the economic differences in the situation. We cannot "have our cake and eat it." In other words, we cannot raise wages, railway rates, expand our credits and currency, and hope to maintain the same level of prices of foods. All that the Food Administration can do is to see, as far as is humanly possible, that these alterations take place without speculation or profiteering and that such readjustments are conducted in an orderly manner. Even though it were in the power of the Food Administration to repress prices, the effect of maintaining the same price level in the face of such increases in costs of manufacture, transportation and distribution would be to ultimately curtail production itself. We are in a period of inflation and we cannot avoid the results.

We have had a large measure of voluntary co-operation, both from producers, manufacturers and wholesalers, in suppression of profiteering and speculation. There are cases that have required stern measures and some millions of dollars have been refunded in one way or another to the public. The number of firms penalized is proportionately not large to the total firms engaged.

In the matter of voluntary control of retailers we have had more difficulty, but in the publication from week to week in every town in the country of "fair prices" based upon wholesale costs and type of service, there has been a considerable check made upon overcharges. The Food Administration continues through the armistice until legal peace and there will be no relaxation of efforts to keep down profiteering and speculation to the last moment.

Public Hearing on Oleomargarine.

A public hearing to consider definitions and standards for oleomargarine will be held by the Joint Committee on Definitions and Standards on December 4th, at the Bureau of Chemistry, United States Department of Agriculture, Washington, D. C.

All persons interested are invited to attend this hearing and present any facts that will assist the committee in arriving at correct conclusions on the subject. Those who desire may present their views in writing, on or before the date of hearing, to the Secretary of the Committee, Bureau of Chemistry, Washington, D. C. The hearing will be held at the Bureau of Chemistry Building, 216 13th street, S. W.

The Joint Committee on Definitions and Standards is composed of representatives of the United States Department of Agriculture, the Association of Amer-

ican Dairy, Food and Drug Officials, and the Association of Official Agricultural Chemists.

Sugar Ration Increased.

In the beet sugar producing states and in the cane sugar producing territory of Louisiana, where there is sufficient sugar available, the monthly per capita allowance of sugar for household use will be increased from three to four pounds, which will become effective on December 1st. Public eating places in these sections will be granted four pounds of sugar instead of three, as at present, for every ninety meals served.

This increase is granted because of the lack of cargo space for overseas shipment, together with the insufficient storage facilities in this country.

The monthly allowance was increased throughout the nation on November 1st from two to three pounds per capita per month, in accordance with the Food Administration's promise to relieve the sugar allowance at the earliest opportunity.

Declaration of Quantity of Contents of Canned Artichokes.

The Bureau of Chemistry is of the opinion that the quantity of the contents of canned artichokes should be declared in terms of the net weight of the drained contents. An additional statement of the number of artichokes in the can may be made if the canner so desires.

Labels of Beverages Containing Fruit Juice.

The Bureau of Chemistry is of the opinion that terms such as ade, squash, punch, crush and smash, when used in conjunction with the name of a fruit, can be applied correctly only to beverages, either still or carbonated, which contain the fruit or juice of the fruit named. Such terms should not be applied to products flavored only with essential oils or essences.

Misbranding of Canned Swiss Chard.

It has come to the attention of the Bureau of Chemistry that certain canners of Swiss chard are labeling this product as canned spinach. The bureau is informed that spinach and Swiss chard are two entirely distinct varieties of vegetable and that their names are accordingly not interchangeable. The labeling of canned Swiss chard as spinach or as a variety or type of spinach is regarded as a violation of the Federal Food and Drugs Act.

Stocks of Grain, Flour, Corn Meal and Other Food Products on Hand, October 1, 1918.

The commercial stocks of wheat reported to the United States Department of Agriculture in a food survey for October 1, 1918, amount to 195,997,839 bushels as against 114,331,842 bushels, reported on hand in a similar survey for September 1. This refers to stocks actually reported and does not represent the total commercial stocks of the country, nor does it include stocks on farms. According to the statement just issued by the department, these stocks were held by 12,979 firms, consisting of elevators, warehouses, grain mills and wholesale dealers. These holdings, like those of September 1, 1918, were nearly three times as large as the stocks held by the same firms on October 1, 1917, the actual percentage for October 1 being 297.6 per cent of the 1917 stocks.

The commercial visible supply figures as published by the Chicago Board of Trade show only 90,623,000

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ARMOUR AND COMPANY
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bushels of wheat as against 7,789,000 a year ago, and Bradstreet figures for 1918 show 98,155,000 bushels as against 13,072,000 bushels for 1917. A very great relative increase in the commercial stocks of wheat on October 1, this year, as compared with the same date last year is shown by these figures as well as by the results of the more extensive survey.

The commercial stocks of other cereals reported for October 1, 1918, according to the department statement, were as follows: Corn, 21,119,078 bushels; oats, 85,391,911 bushels; barley, 27,560,565 bushels, and rye, 9,679,069 bushels. The stocks represent the following percentages of the corresponding stocks on October 1, 1917: Corn, 275.4 per cent; oats, 127.7 per cent; barley, 112.7 per cent; and rye, 152.7 per cent.

The commercial stocks of flour and corn meal as reported for the survey were: Wheat flour, white, 5,466,423 barrels; whole wheat and graham flour, 88,372 barrels; barley flour, 148,599 barrels; rye flour, 310,285 barrels; corn flour, 40,097,525 pounds; corn meal, 77,770,538 pounds; buckwheat flour, 2,463,605 pounds; mixed flour, 16,407,492 pounds. These stocks represent the following percentages of the stocks on hand a year ago: Wheat flour, white, 131 per cent; whole wheat and graham flour, 155.9 per cent; rye flour, 237.1 per cent; corn flour, 985.2 per cent; buckwheat flour, 106.9 per cent; mixed flour, 176 per cent.

Elevators, warehouses and wholesale dealers reported stocks of beans amounting to 8,977,075 bushels, while wholesale grocers and warehouses reported the following commodities in the amounts indicated: Rice, 42,052,065 pounds; rolled oats, 67,458,964 pounds; canned salmon, 89,902,669 pounds; canned tomatoes,

125,568,452 pounds; canned corn, 35,265,824 pounds; sugar, 238,024,813 pounds. These stocks represent the following percentages of the corresponding stocks on hand October 1, 1917: Beans, 109.3 per cent; rice, 37.7 per cent; rolled oats, 158.6 per cent; canned salmon, 79 per cent; canned tomatoes, 126 per cent; canned corn, 85.6 per cent; sugar, 105.9 per cent.

Stocks of condensed and evaporated milk were reported by condensaries, cold storages, warehouses and wholesale grocers, as follows: Condensed milk, 66,477,378 pounds; evaporated milk, 124,941,051 pounds. The holdings of condensed milk reported for October 1, 1918, represented 106.8 per cent of the stocks held by the same firms a year earlier, and the holdings of evaporated milk, 78.2 per cent.

Colorado Recognizes Importance of Dehydration.

The State of Colorado has recognized the importance of dehydration of fruits and vegetables and has already taken measures to insure the purity of the product and to prevent purely promotional concerns from injuring the industry. The Governor of the State has issued a proclamation requiring all dehydrating companies to appear before a committee appointed by him, submit samples of their product, give complete information concerning their business organization and receive the official approval of this committee before being allowed to do business within the State. The committee consists of the president of the State Agricultural College, the Marketing Agent in Charge for the United States Department of Markets, Colorado Division, and a prominent Denver banker.

Penalties Under Food Control Act

For violations of the U. S. Food Administration's regulations a number of licenses were penalized during the past few weeks. Among them were the following:

The Amalgamated Sugar Company of Salt Lake City, Utah, was obliged to forfeit 10,000 pounds of sugar, which was accepted by the Food Administration in lieu of further action against them, for having delivered sugar to a canning company without obtaining the necessary certificate.

Emil Stockle, a baker of Santa Barbara, Cal., had his license revoked for an unlimited period, in addition to being served with an unfair order, for having operated after surrendering his license and for having violated the 70 per cent rule in using an excess amount of flour.

The Phoenix Bakery, of Phoenix, Ariz., was permitted to contribute \$1,000 to war charities, in lieu of further penalties, for having used practically no substitutes in bread baked at his plant during the month of June, and they are compelled to use, over a period of ninety days, in the making of bread, an amount of substitutes to equalize the deficit discovered in the investigation.

The Standard Refining Company, New York City, had their license revoked for four weeks, effective October 12th, for having delivered honey adulterated with glucose instead of "pure honey," as ordered.

J. H. Bibb, of Hall, Tenn., was penalized with an unfair order, effective October 28, and to remain effective until further notice, for violating regulations regarding the sale of flour and sugar.

Cruz De Santiago, a grocery peddler at Laredo, Tex., was prohibited from buying lard, sugar and flour until November 14th, for having purchased lard in unreasonable quantities, and because he had sold it with the evident knowledge that it was to be smuggled across the Mexican border.

Gottman & Sons, Chicago, Ill., were permitted to contribute \$10,000 worth of candy to the American soldiers and sailors located in Illinois, for having made false reports on the amount of sugar received this year, which they pleaded was due entirely to a lack of understanding on the part of their bookkeeper.

Lang & Co., 380 Eleventh avenue, New York City, had their license revoked for one month, effective October 25th, for having sold wheat, rye, rice and wheat graham flour at excess profits.

G. M. Allen, Jr., of Winston-Salem, N. C., was deprived of his license for permitting a salesman to sell, and bill through him, a car of feed at \$50, which was \$2.00 above the legitimate price prescribed by the Food Administration.

The C. A. Gambrill Manufacturing Company, millers of Baltimore, Md., operating the Patapsco Mills of Ellicott City, Maryland, whose license was revoked on September 18th for an unlimited period, was permitted to resume operations under its license on October 21st, pending a review of the decision rendered against the company, which was that the excess profits must be paid to the Food Administration in cash or by the delivery of flour free of charge. They were allowed to resume operation before final decision because this cannot be reached for some time until the accounts and reports have been corrected, and because they made a written agreement to pay in cash such sum as is found on such review to be due.

The J. C. Lysle Milling Company, Leavenworth, Kan., were permitted to donate \$10,000 to the Red Cross in lieu of further action, for having made grossly inaccurate reports on profits accruing from the sale of flour, in order to conceal the actual aggregate profits of the firm.

The Tripoli Grocery Company, a retail store, doing a business which does not amount to \$100,000 a year, and, consequently, is not licensed by the Food Administration and does not come directly under its control, was prohibited from making purchases from all food administration licensees, who had been notified to that effect, until November 11th, for having sold wheat flour without substitutes and shipping wheat flour labeled as barley flour.

Charles Berry and A. Cardaropolo, bakers in Springfield, Mass., had their license revoked, the former for an unlimited period, and the latter from October 8th to 15th, with permission to apply for a new license on that date, for failure to file reports. Berry did not file any reports

even after he was requested to do so and did not attend the hearing, where it was brought out that he had stated that he was not obliged to conform to this ruling of the Food Administration.

M. S. Block, Juneau, Alaska, a broker in fish and canned salmon, had his license revoked for an unlimited period for having made a practice of paying more than the Government prices.

J. A. Laramy, ice cream and soda water maker of Malta, Mont., has been deprived of sugar indefinitely on account of hoarding.

The Princess Confectionery Company, Billings, Mont., have been denied sugar until April 1, 1919, for attempting to obtain more than its justified allotment.

H. Frisch, a grocer in St. Louis, has been forbidden to sell sugar for nine days, because of profiteering.

Manuel Gaffstein, a grocer in St. Louis, was obliged to display for two weeks a poster announcing that he has violated Food Administration regulations by profiteering in sugar.

The Independent Milk & Cream Company, Butte, Mont., have been deprived of sugar until May 1, 1919, for having a large excess of sugar on hand.

George F. Strok, of Bellflower, Mo., has been forbidden to sell sugar for ten days because of profiteering.

Won Jan, Tucson Ariz., was permitted to contribute \$50 to the Red Cross for serving excessive quantities of sugar to patrons at the Joss Stick Restaurant.

The Winfield Flour Mills Co., the Alexander Milling Company, and the Adams Milling & Grain Company, all of Winfield, Kan., were compelled to pay to all parties who sold wheat to them on August 1st, 2d and 3d, amounts equal to the cut in price, and in addition were permitted to contribute \$300, \$200 and \$100 respectively to the Red Cross, in lieu of drastic action by the Food Administration, for having cut prices on all wheat received on August 1st, 2d and 3d.

Fritz Wahl, of Portland, Ore., was fined \$50 for hoarding, as it was found that he had stored in his home 160 pounds of sugar, 5 unopened sacks of flour and other food commodities in excessive quantities.

The Minnesota Club, one of the prominent clubs of St. Paul, agreed to voluntarily close its restaurant until November 1st, to pay its employees during this period, and to contribute \$1,000 to the fire sufferers of northern Minnesota, as it was found that the house manager of this club, without knowledge or sanction of its officers, concealed over 800 pounds of sugar after returning 3,300 pounds to the channels of trade on September 13th. In addition to this he also sold 500 pounds to the Carling Company, which made a total of 1,300 pounds in excess of the legitimate allowance. The Food Administration accepted this offer and rescinded the order which forbade licensees dealing in licensed food commodities to supply the club from October 10, 1918, to January 1, 1919, and the club promised full compliance, in the future, with all food regulations.

The Ginter Company, which operates sixty retail stores in and near Boston, Mass., were permitted to contribute \$20,000 to the United War Work Fund Campaign, and each of the sixty stores was required to display for thirty days a sign declaring that it had violated Food Administration regulations and promising future compliance with its rulings, for having knowingly obtained sugar in an amount grossly in excess of the proper allotment, and for having submitted erroneous reports to the Food Administration in its applications for excessive amounts of sugar certificates.

The New York Cafe, 24 West Hunter street, Atlanta, Ga., voluntarily contributed \$50 to the Atlanta Anti-Tuberculosis Association, as an evidence of its regret, for having, through misunderstanding of the Food Administration's regulations, changed the figure on its sugar certificate from 100 to 200 pounds, which was discovered by a relative of the manager, who immediately called on the company which had delivered the sugar and had them take it away.

Manser & Cressman, a partnership operating flour mills and elevators at Catasauqua and Bath, Pa., have been deprived of their license for an unlimited period, for having sold excessive quantities of flour to farmers without the proper amount of substitutes.

The Package Wind Blows The Langston Way



Wheat Substitutes No Longer Required in Baking.

The Food Administration announced recently that all regulations requiring the use of wheat substitutes in baking are suspended and that the white loaf may return to its own. Restricted consumption of wheat bread is still advocated, however. Carrying on of conservation is requested by the Food Administration. There is to be no relaxation in the general food saving program.

Plans are now being worked out to care for accumulated stocks of the substitute cereals. Under the new program coarse grains will be used primarily for animal feeds. The Food Administration Grain Corporation is formulating plans for the purchase of substitutes that were acquired before November 12th, which do not find a ready sale by the millers, dealers or bakers.

Relaxation of the wheat regulations is a direct result of the military armistice. The Mediterranean Sea is now safe for commercial transport, and the European nations can again draw upon the large wheat supplies in India and Australia. With cargo ships now released from military service it will also be possible to tap accumulated supplies in the Argentine.

In withdrawing the substitute regulations, however, the Food Administration emphasizes the necessity for continued conservation of all staple foods. This country will be called upon the coming year to send at least 20,000,000 tons of foodstuffs to Europe—practically the limit of loading capacity at our ports. This compares with the export of 11,820,000 tons last year—the greatest in our history—and a pre-war normal of less than 6,000,000 tons.

The Food Administration first compelled the purchase of other cereals with wheat flour on January 28, 1918, when the "50-50" rule went into effect. On Feb-

ruary 3d, the first compulsory baking regulations were imposed upon the trade. On that date bakers were required to mix 5 per cent of other cereals with their wheat flour, and gradually increased this to 20 per cent by February 24th. Bread containing 20 per cent of wheat substitutes was given the name of Victory Bread. To assist further in conservation, Monday and Wednesday of each week were designated as wheatless days and one meal each day as a wheatless meal.

In April, the wheat shortage had become so acute that the bakers were compelled still further to increase the use of substitutes, using 25 per cent of non-wheat cereals by April 14th. These baking regulations, as well as the 50-50 rule, remained in force until August 28th, when the 50-50 rule was changed to 80-20, and only one pound of substitutes had to be purchased with each four pounds of wheat flour. At the same time, bakers were allowed to make a bread containing only 20 per cent of wheat substitutes. Both of these rulings remained effective until November 14.

Food Containers May Be Made of Tin Again.

Restrictions placed on the use of tin plate in the manufacture of food containers were removed recently by joint agreement between the War Industries Board and the Food Administration. In view of the signing of the armistice by Germany it was felt that these rigid rules, which became effective October 1st, could be relaxed.

The various trades affected by the removal of these restrictions are: Manufacturers and packers of baking powder, ground spices, powdered cocoa, chocolate, candy, coffee, coffee substitutes, tea, spaghetti, pickles, condensed milk, salt, lard and lard substitutes, macaroni, syrups and molasses.

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THIS product is taxed and regulated the same as animal oleomargarine. We oppose the former and positively favor the latter. We want this product sold on its merits for just exactly what it is. We refuse to sell moonshiners. This product is sold only in one, two and five pound cartons. Our business has grown rapidly on new, progressive lines.

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The duty of everyone to consider true economy in food purchases is more important than ever in these days.

In order to secure the most for your money—most in quality and most in food value—buy your Margarine by name—ask for Moxley's.

You don't know how good Margarine is until you have tried Moxley's. Be fair to yourself and try it with your next meal.

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RECENT PATENTS

The following patents of interest to readers of this journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,276,888. Method of treating food remnants. Edward C. Emery, Los Angeles, Cal.

1,276,910. Method of treating lacteal fluids. Ernst D. Heller, New York, N. Y., assignor to The Vacuum Churn Corporation, same place.

1,277,148. Method of derinding oranges and product thereof. Ferdinand W. Starr, Oklahoma, Okla.

1,277,183. Process of and apparatus for preparing food products. Manfred Brandenstein, San Francisco, Cal.

1,277,336. Substitute highly-nitrogenous food and process of producing the same. Nicolaus Moskovits and Kai A. Jacobsen, Nagy-Varad, Hungary.

1,277,672. Food product. Paul R. Welch, Westfield, N. Y., assignor to The Welch Grape Juice Co., same place.

1,277,727. Process of recovering substances from fresh, decomposed, or partially-decomposed eggs. John M. Hussey, Wichita, Kans.

1,278,200. Baking oven. John S. Osborne, Stockton, Cal.

1,278,257. Cream of tartar from wine-lees. Henri Tobler, Hackensack, N. J.

1,278,291. Peach-turning apparatus. Louis H. Balwick, Oakland, Cal., assignor to Premier Machinery Co., same place.

1,278,268. Food product. Robert T. Hogg, Oxford, Pa.

1,278,517. Dough-scaling machine. Frank Streich, Joliet, Ill., assignor to The Union Wrapping Machine Co., same place.

1,278,547. Fruit cleaner and grader. Frederick J. Yandle, Santa Rosa, Cal.

1,278,679. Apple-quartering machine. Charles Krino, Ogden, Utah.

1,278,708. Drying apparatus for elementary paste, etc. Paul de Martini, Jamaica, N. Y.

1,279,143. Method of mixing dough. Curtis J. Patterson, Kansas City, Kans.

1,279,309. Nut-cracking machine. John W. Enright, New Orleans, La.

1,279,379. Vacuum process for preserving and other purposes. William S. Sellars, Brooklyn, N. Y., assignor to American Can Co.

1,279,390. Food composition. Fanny O. Marquis, New York, N. Y.

Dehydration of Fruits and Vegetables by the Government.

One of the important projects started by the Department of Agriculture under authority conferred in the regular Agricultural Appropriation Act recently passed is the establishment of an industry within the United States to dry fruits and vegetables as a means of conserving the food supply of the Nation.

An appropriation of \$250,000 is included in that act to enable the Secretary of Agriculture to determine the best means and processes of dehydration and to disseminate information as to the value and suitability of dried products for food. Authority is given to establish and operate plants for drying fruits, vegetables and other edible products for supplying food for the Army and Navy, if such action is deemed necessary by the President. Co-operation with commercial drying concerns is also provided.

The Secretary of Agriculture has designated an advisory board to administer this appropriation and outline and control the work to be done under it. The advisory board is to consist of representatives of the bureaus within the Department of Agriculture which are concerned with food production, regulation and conservation, and of one representative each of the Food Administration and of the Sanitary Corps of the Army.

Notices of Judgment Under the Food and Drugs Act

(Continued from the preceding issue.)

5770. Adulteration of tomato pulp.

Substantially the same as No. 5765.

5771. Adulteration of milk.

Substantially the same as No. 5763.

5772. Adulteration of milk.

Added water and decomposition was held to constitute adulteration. On November 13, 1917, the defendants pled guilty and were fined \$75.

5773. Adulteration of tomatoes.

The addition of water, which had been substituted in part for tomatoes, was held to constitute adulteration. On July 3, 1917, the product was delivered to claimant upon payment of the costs of the proceedings and under a good and sufficient bond, in conformity with section 10 of the act.

5774. Adulteration of oranges.

Filthy and decomposed oranges were held to be adulterated. On March 22, 1917, no claimant having appeared, the product was destroyed.

5775. Adulteration of tomato sauce.

Decomposition was held to constitute adulteration. On July 26, 1917, no claimant having appeared, the product was destroyed.

5776. Adulteration of oranges.

Substantially the same as No. 5774.

5777. Adulteration and misbranding of pork and beans.

A product labeled "Thelma Brand Pork and Beans * * * are unexcelled as a nutritious and palatable food product, contains only 5 per cent of starch," was held to be adulterated and misbranded because soya beans had been substituted for navy beans. On March 24, 1917, claimants having consented, the product was delivered to them upon payment of the costs of the proceedings and under \$500, in conformity with section 10 of the act.

5778. Adulteration of oranges.

Filthy and decomposed oranges were held to be adulterated. On March 22, 1917, no claimant having appeared, the product was destroyed and the empty containers were sold at a private sale.

5779. Adulteration and misbranding of "Effervescent Bernag."

An article labeled as above, consisting essentially of sugar, boric acid, tartaric acid, and sodium bicarbonate, was held to be adulterated and misbranded because of the addition of sugar and boric acid, or borax, which had been substituted in part for "Effervescent Bernag," consisting of tartrate of soda, flavored with lemon oil, which the article purported to be. On August 6, 1917, the defendants pled guilty and were fined \$50.

5780. Misbranding of "Bigler's Condition Powder," "Bigler's Hog Cholera Specific," and "Bigler Anti-Hog Cholera Tonic."

Misbranding of the "Condition Powder," which consisted of a brownish mixture containing common salt, iron oxid, sulphur, vegetable fiber, and fats, was alleged because of the false claim that it was a cure for all diseases of cattle, horses, sheep, and hogs; and a preventive of all contagious diseases. The article labeled "Hog Cholera Specific," which consisted of a flesh-colored powder, containing chiefly carbonates and oxids of calcium, magnesium, and iron, and a small amount of sulphur, was held to be misbranded because of the false claim that it was a cure for hog cholera, and was effective for all disorders of the bowels, blood, and digestive organs. Misbranding of "Hog Cholera Tonic," which consisted of a flesh-colored powder, containing chiefly oxids and carbonates of calcium, magnesium and iron, with a small amount of sulphur, was alleged because of the false claim that it was a treatment for hog cholera and for all disorders of the bowels, blood, and digestive organs. On September 24, 1917, the defendants pled guilty and were fined \$50 and costs.

5781. Misbranding of "Gonorrhoea and Gleet 3 Day Cure," "Old Indian Fever Tonic," "Pain-I-Cure," and "Walker's Dead Shot Colic Cure."

Misbranding of "Gonorrhoea and Gleet 3 Day Cure," which appeared to be an aqueous solution of zinc sulphate, sulphocarbonate of zinc, boric acid, opium and hydrastine, was held because of the false claim that it was a cure for gonorrhoea or gleet, and also because it con-

tained opium and failed to bear a statement on the package of the quantity or proportion of opium contained therein. Misbranding of the "Fever Tonic," which appeared to be a solution of magnesium sulphate and a sulphate of quinine, made acid with aromatic sulphuric acid and colored red with a coal-tar dye, was held because of the false claim that it was a cure for every form of fever and for la grippe, neuralgia, measles and influenza. The article labeled "Pain-I-Cure," which was a preparation consisting of ammonia, chloroform, alcohol, capsicum, camphor, morphine, and an odor of oils suggesting the presence of oils of sassafras and cloves, with others not identified, was held to be misbranded because of the false claim that it was a cure for pain and a relief for all kinds of lameness, swellings of all kinds, sick stomach, pneumonia and sea sickness. The product labeled "Walker's Dead Shot Colic Cure," which appeared to be a hydro-alcoholic solution of essential oils, gums, chloroform, opium, camphor and capsicum, was held to be misbranded because of the false claim that it was a cure for colic in mules and horses, and because of the false statement on the label that the product was "perfectly harmless," whereas it contained harmful ingredients, such as opium and chloroform. On September 21, 1917, the defendants pled guilty and were fined \$50 and costs.

5782. Adulteration of tomato paste.

Decomposition was held to constitute adulteration. On September 19, 1917, judgment for the costs of the proceedings was entered against claimants and the product was destroyed.

5783. Adulteration and misbranding of vinegar.

A product labeled "Pure Cider Vinegar" was held to be adulterated and misbranded because of the addition of distilled vinegar or dilute acetic acid, which had been substituted in part for cider vinegar. On June 13, 1917, claimants having consented, the product was delivered to them upon payment of the costs of the proceedings and under \$1,250 bond, in conformity with section 10 of the act.

5784. Misbranding of macaroni.

Macaroni, which was of domestic manufacture, but so labeled as to give the impression that it was a foreign product, was held to be misbranded. On June 15, 1917, claimants having admitted the allegations, the product was released to them upon payment of the costs of the proceedings and under \$350 bond, conditioned upon proper labeling.

5785. Adulteration of baked beans.

Decomposition was held to constitute adulteration. On October 31, 1917, no claimant having appeared, the product was destroyed and the empty cases or containers were sold by the U. S. marshal.

5786. Adulteration and misbranding of vinegar.

Substantially the same as No. 5783. Bond, \$1,000.

5787. Adulteration of tomatoes.

A product labeled "Orvilla Brand Tomatoes" was held to be adulterated because of the addition of water. On May 7, 1917, claimants having admitted the allegations, the product was delivered to them upon payment of the costs of the proceedings and under \$2,500 bond, conditioned upon proper labeling.

5788. Adulteration and misbranding of oil of birch.

The addition of synthetic methyl salicylate in an article sold as oil of birch was held to constitute adulteration and misbranding. Also, the quantity of the contents was not stated on the outside of the package. On June 27, 1917, claimant having consented, the product was delivered to him upon payment of the costs of the proceedings and under \$250 bond, conditioned in part that the product should be properly relabeled.

5789. Adulteration and misbranding of oil of birch.

Substantially the same as No. 5788, excepting that no claimant appeared and the product was sold by the U. S. marshal as "A mixture of synthetic methyl salicylate and oil of birch."

5790. Adulteration and misbranding of oil of birch.

Substantially the same as No. 5789.

5791. Adulteration and misbranding of beans.

An article so labeled as to give the impression that the beans were navy beans, whereas they consisted of soya

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beans, was held to be adulterated and misbranded. On June 7, 1917, claimants having consented, the product was delivered to them upon payment of the costs of the proceedings and under \$500 bond, in conformity with section 10 of the act.

5792. Adulteration and misbranding of beans.

Substantially the same as No. 5791.

5793. Misbranding of Dixie Brand cottonseed meal.

Misbranding was alleged because the guaranteed analysis of "protein 38.62 per cent to 43 per cent—crude fiber 8 to 12 per cent," was not substantiated by laboratory analysis, which showed 30.7 per cent protein and 15.6 per cent crude fiber. On October 8, 1917, the court imposed a fine of \$10 and costs against the defendant company, in default of its appearance.

5794. Adulteration and misbranding of Marchand's peroxid of hydrogen.

Adulteration and misbranding was alleged because the article fell below the professed standard and quality under which it was sold, "15 Vol. H₂O₂ * * *, hydrogen dioxide 4.5 per cent" and was found to contain, in two bottles, 15.2 and 14.9 fluid ounces, 3.64 per cent hydrogen peroxid and .04 grain acetanilid per fluid ounce; also because of the false statement on the label, "It is 50 per cent stronger than the U. S. P. requirements," and because the package containing the article failed to bear a statement of the presence, quantity, or proportion of acetanilid. On July 10, 1917, the defendants pled guilty and were fined \$15.

5795. Adulteration and misbranding of Marchand's peroxid of hydrogen.

Substantially the same as No. 5794, excepting that the article was sold as ¼-pound bottle, whereas it was found to contain 3.54 fluid ounces, net weight.

5796. Adulteration and misbranding of wheat shorts.

Adulteration and misbranding was alleged because of the presence of wheat screenings, whereas the article was labeled "wheat shorts." On October 8, 1917, the defendants pled nolo contendere and were fined \$20 and costs.

5797. Adulteration and misbranding of Marchand's peroxid of hydrogen.

Substantially the same as No. 5794, excepting that the bottle was sold as containing eight fluid ounces and was labeled "Av. Contents 8 Fl. Oz.," whereas it was found to contain 7.56 fluid ounces.

5798. Adulteration of eggs.

Filthy and decomposed eggs were held to be adulterated. On October 5, 1917, the defendant pled guilty and was fined \$25.

5799. Adulteration and misbranding of tomato sauce.

Adulteration and misbranding of an article labeled "Pure Tomato Sauce" was held because of filth and decomposition. On July 19, 1917, the defendants pled guilty and were fined \$15 and costs.

5800. Adulteration of cream.

Cream, to which had been added starch, and which was deficient in butter fat, was held to be adulterated. On June 28, 1917, the defendants pled guilty and were fined \$25.

5801. Adulteration and misbranding of vinegar.

An article labeled "Pure Apple Vinegar" was held to be adulterated and misbranded because of the addition of water and distilled vinegar or acetic acid. On June 21, 1917, the defendant pled guilty and was fined \$25.

5802. Misbranding of cottonseed meal or cake.

Misbranding was alleged because the guaranteed analysis of "Protein, not less than 41 to 43 per cent, Crude Fiber, not more than 10½ to 12 per cent" was not substantiated by laboratory analysis, which showed, protein 38.1 per cent and crude fiber 13.8 per cent. On September 19, 1917, the defendants pled guilty and were fined \$50 and costs.

5803. Adulteration and misbranding of vinegar.

Substantially the same as No. 5783. Bond, \$1,000.

5804. Adulteration of walnut meats.

Moldy, shriveled and stale walnut meats, infested with insect web and excreta, were held to be adulterated. On June 27, 1917, claimants having consented, the product was released to them under \$400 bond, and they were ordered to denature the portion of the product unfit for human consumption so that it might be used for food for domestic animals and that the Government might recover from claimant the costs of the proceedings.

5805. Misbranding of sardines.

Misbranding was alleged because the quantity of the contents was not plainly and conspicuously marked on the outside of the package. On October 9, 1917, the defendant pled guilty and was fined \$50.

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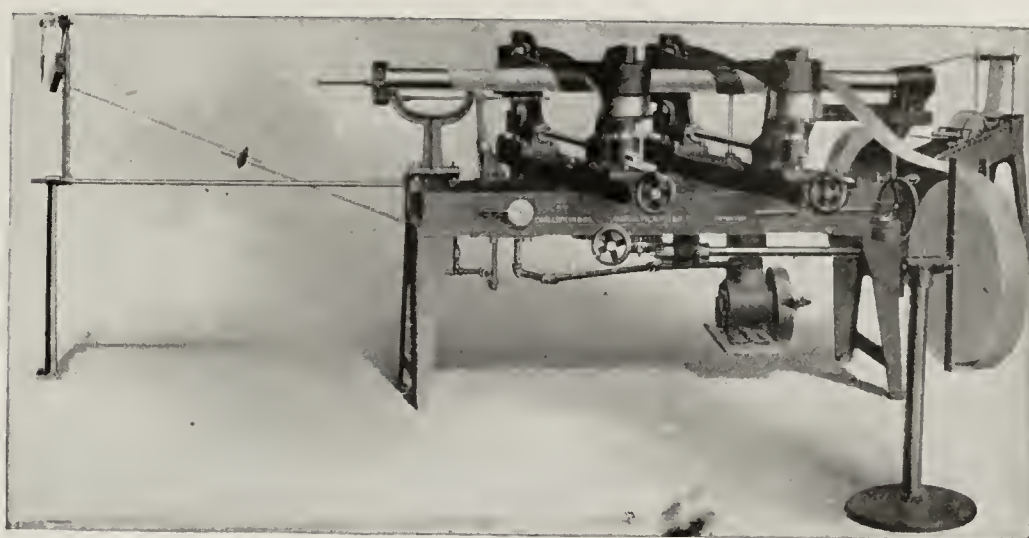
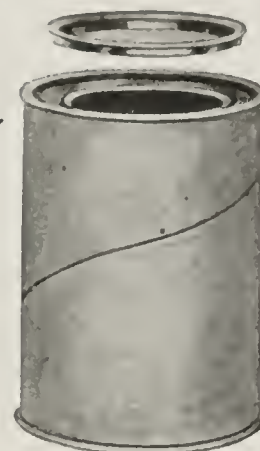
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5806. Adulteration of tomatoes.

Added water was held to constitute adulteration. On August 24, 1917, the defendants pled guilty and were fined \$30 and costs.

5807. Adulteration of tomato pulp.

Adulteration was held because of decomposition and because the cans containing the article were swollen and leaking. On July 13, 1917, no claimant having appeared, the product was destroyed.

5808. Adulteration of tomato pulp.

Decomposition was held to constitute adulteration. On July 5, 1917, no claimant having appeared, the product was destroyed.

5809. Adulteration and misbranding of gelatin.

An article labeled "Pure Food Gelatin" was held to be adulterated because it had been composed of glue and was found to contain an added and deleterious ingredient, to wit, zinc. Misbranding was alleged because of the false label and because the quantity of the contents was not plainly and conspicuously marked on the outside of the package. On August 17, 1917, claimants having admitted the allegations, the product was delivered to them upon payment of the costs of the proceedings and under \$1,000 bond, conditioned in part that the article be labeled "Not to be used for food or for the manufacture of food articles."

5810. Adulteration and misbranding of oil of birch.

Substantially the same as No. 5788. Bond, \$2,400.

5811. Adulteration of eggs.

Substantially the same as No. 5798; product was delivered to claimants upon payment of the costs of the proceedings and on condition that the unfit portion be used for tanning purposes only.

5812. Adulteration and misbranding of gelatin.

The presence of deleterious ingredients such as arsenic, copper and zinc, in an article sold as gelatin, was held to constitute adulteration and misbranding. On October 2, 1917, claimants having consented, the product was released to them upon payment of the costs of the proceedings and under a good and sufficient bond, conditioned that the product be relabeled under proper supervision.

5813. Adulteration and misbranding of gelatin.

Substantially the same as No. 5812, excepting that the article also contained glue; bond, \$800; conditioned upon proper labeling and that the article should not be used for food purposes or in the manufacture of articles of food.

5814. Adulteration and misbranding of chocolate candy.

Adulteration and misbranding of an article labeled "Almond Tops * * * Tammany Chocolates * * *" was held because the article was an inferior product and the chocolate coating contained fat or fats foreign to chocolate and concealed its inferiority to pure chocolate-coated candy. On July 30, 1917, the defendants pled nolo contendere and were fined \$50.

5815. Adulteration of oysters.

Added water was held to constitute adulteration. On July 6, 1917, the defendant pled guilty and was fined \$20.

5816. Adulteration and misbranding of mineral spring water.

Filth and decomposition were held to constitute adulteration, and misbranding was alleged because of the false statement on the label that the bottle contained one quart and 30 fluid ounces, whereas it was found to contain less, and because the quantity of the contents was not plainly and conspicuously marked on the outside of the package. On September 20, 1917, the defendants pled guilty and were fined \$50.

5817. Misbranding of Vermouth.

Misbranding of a domestic product labeled "Vermouth di vino * * * Qualita Superiore * * * Venezia," was alleged because it was so labeled as to give the impression that it was a foreign product, which contains at least 50 per cent of wine, whereas this was found to contain approximately 17½ per cent of wine, and also because the quantity of the contents was not plainly and conspicuously marked on the outside of the package. On September 20, 1917, the defendant pled guilty and was fined \$50 and costs.

5818. Adulteration of tomatoes and oysters.

Added water was held to constitute adulteration. On September 14, 1917, the defendants pled guilty and were fined \$75 and costs.



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*Waxed Paper
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Millions of squares of K. V. P. waxed and vegetable parchment papers are being used to protect much of the "red meat" that finds its way into the mess kitchens of army camps and cantonments.

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5819. Adulteration of tomatoes.

Substantially the same as No. 5806. Fine, \$50 and costs.

5820. Misbranding of "La Franco Combination Treatment" and "La Franco Vitalizer No. 200."

The article labeled "La Franco Combination Treatment," which included "The La Franco Female Pills No. 2," "The La Franco Blood & Emmenagogue Remedy," "The La Franco Antiseptic Douche Powder," and "The La Franco Tea Tablets," was held to be misbranded because of the false claim that this combination treatment was a cure for all inflammatory conditions of vagina, womb and uterine appendages, and for painful, delayed, irregular and suppressed monthly periods, and a remedy for impure and watery blood, shattered nerve forces, anaemia, and the first stages of consumption. The article labeled "The Vitalizer" was held to be misbranded because of the false claim that it was a remedy for nervous debility, overwork, mental strain, loss of flesh and strength, and varicocele. On September 24, 1917, the defendant pled guilty and was fined \$75.

5821. Adulteration and misbranding of "Hydrozone."

An article labeled as above, sold under the professed standard of strength of "Hydrogen Dioxide 9 per cent," was held to be adulterated and misbranded when found to contain 5.45 per cent hydrogen peroxid, and because the quantity of the contents was not stated on the label.

5822. Misbranding of Bristol's sarsaparilla.

Misbranding was alleged because of the false claim that it was a cure for rheumatic affections, skin diseases, neuralgic affections, syphilis, erysipelas, rash, herpes and cutaneous eruptions. The article consisted essentially of a hydroalcoholic solution of potassium iodid, sugar and plant extractives, and showed indications of sarsaparilla and arbutin. On September 24, 1917, the defendants pled guilty and were fined \$50.

5823. Adulteration and misbranding of brandy.

An article labeled "California Brandy" was held to be adulterated and misbranded because it consisted largely of neutral spirits, artificially colored, which had been substituted in part for brandy. On October 9, 1917, the defendants pled guilty and were fined \$50 and costs.

5824. Misbranding of "P. P. P. Prickly Ash Poke Root Potassium and Stillingia."

Misbranding of an article labeled as above, which contained no ingredient or combination of ingredients capable of producing the therapeutic effects claimed, was held to be misbranded because of the false statement on the label that it was a cure for syphilis, scrofula, rheumatism, gout, jaundice, diphtheria, scarlet fever, typhoid fever and pneumonia. On August 9, 1917, no claimant having appeared, the product was destroyed.

5825. Adulteration of prunes.

Filthy and decomposed prunes were held to be adulterated. On July 13, 1917, claimant having consented, the product was destroyed.

5826. Adulteration of eggs.

A shipment of eggs which consisted in whole or in part of filthy, decomposed or putrid animal substance, were held to be adulterated. On June 26, 1917, claimant having consented, the product was released to him upon payment of the costs of the proceedings and under \$250 bond, conditioned upon candling under proper supervision.

5827. Adulteration of eggs.

Substantially the same as No. 5826.

5828. Adulteration of tomato pulp.

Filth and decomposition was held to constitute adulteration. On August 10, 1917, no claimant having appeared, the product was destroyed.

5829. Adulteration of strawberries.

Decomposed strawberries were held to be adulterated. On September 7, 1917, no claimant having appeared, the product was destroyed.

5830. Adulteration of eggs.

Substantially the same as No. 5826. Bond, \$1,000.

5831. Adulteration of eggs.

Substantially the same as No. 5826. Bond, \$324.

5832. Adulteration of frozen eggs.

Substantially the same as No. 5826. Bond, \$500.

5833. Adulteration and misbranding of vinegar.

An article labeled "Pure Apple Vinegar" was held to be adulterated and misbranded because distilled vinegar, added dilute acetic acid and divers other substances had been mixed therewith, which lowered and injuriously affected its quality and strength. On August 7, 1917, claimants having admitted the allegations, the product was released to them upon payment of the costs of the

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War has given to peace a century of development, compassed in half a decade. As privation and suffering develop character so has the misery of war intensified industrial development. Necessity has mothered legions of accomplishments.

The Wireless, but an infant at war's inception, has sprung into the full vigor of perfection, a powerful servant of civilization. The Aeroplane, little more than a toy in 1914, has been brought to a splendid development, placing the straight lanes of the air at the disposal of industry and commerce. Already the U. S. Mail is flying.

And so might the list of war's gifts be told to endless pages, but of them all, let us concern ourselves with one, a gift which is sure to build a new industry full of meaning to all of us, from the highest to the lowest. The Industry of Dehydration. A simple, yet vitally important process for the preservation of our food resources, in peace as in time of war.

Dehydration, which preserves fruits and vegetables by merely removing their free water, has sent tons of essential foodstuffs to the boys in the trenches. Dehydrated fruits and vegetables were adopted by the Quartermaster Corps because they offered a means of providing the fighters with **fresh** garden food in a condensed, palatable and imperishable form. A five gallon tin, nine and three-eighths inches square by fourteen and five-eighths inches high contains fifteen pounds of dehydrated potatoes ready for use, without labor or waste, as soon as rehydrated in water. Such a tin, weighing seventeen pounds when packed, and occupying, in the shipping crate, seven-eighths of a cubic foot of space, represents an equivalent of more than two bushels, or one hundred and twenty pounds of natural potatoes.

The advantages which immediately attracted the Government are even more important for domestic purposes.

Dehydrated foods can be marketed at far less expense (being imperishable and greatly condensed in weight and content) and dehydration will provide all fruits and vegetables in all seasons. The present uncontrollable fluctuation in market prices of perishable foods has been obviated and such stabilizing of market methods and prices will react to the advantage of the grower, the merchant, and the consumer.

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proceedings and under \$500 bond, conditioned upon proper labeling.

5834. Adulteration and misbranding of soap liniment.

An article labeled in part, "Soap Liniment (U. S. P.), Alcohol 70 per cent," was held to be adulterated and misbranded because it differed from the standard of strength, quality and purity as set forth in the Pharmacopoeia, and because it contained only 60.9 per cent of alcohol, by volume. On September 20, 1917, claimants having consented, the product was released to them upon payment of the costs of the proceedings and under \$100 bond, in conformity with section 10 of the act.

5835. Adulteration and misbranding of soap liniment.

Substantially the same as No. 5834, with the exception that the article contained 62.7 per cent of alcohol.

5836. Misbranding of "Japanese Wild Cherry Cough Syrup," and "Japanese Herb Laxative Compound."

The "Cough Syrup," consisting essentially of a hydro-alcoholic solution of plant material and menthol, was held to be misbranded because of the false claim that it was a cure for all lung diseases. Misbranding of the "Laxative Compound" was alleged because it contained alcohol and failed to bear a statement of the proportion or quantity of alcohol contained therein, and because of the false claim that it was a cure for rheumatism, blood disorders, stomach trouble, liver and kidney complaint, palpitation of the heart, and all forms of weakness. On October 15, 1917, the defendant pled guilty and was fined \$75 and costs.

5837. Adulteration and misbranding of brandy.

An article labeled "Extra Quality Cognac Type" was held to be misbranded and adulterated because it was found to have been prepared in imitation of cognac type brandy, and was composed of neutral spirits, artificially colored. On October 1, 1917, the defendant pled guilty and was fined \$25.

5838. Adulteration and misbranding of ground oil cake.

The presence of weed seeds or screenings in an article labeled "Ground Oil Cake," was held to constitute adulteration, and misbranding was alleged because the article was so labeled as to give the impression that it consisted exclusively of ground oil cake. On October 4, 1917, the defendant pled guilty and was fined \$15.

5839. Adulteration and misbranding of oil of sassafras.

An article labeled as above was held to be adulterated and misbranded because synthetic oil of sassafras had been substituted for genuine oil of sassafras. On August 28, 1917, no claimant having appeared, the product was properly labeled and sold by the U. S. marshal.

5840. Adulteration of horse beans.

Filth and decomposition was held to constitute adulteration. On August 10, 1917, claimants paid the cost of the proceedings and the product was delivered to them under \$2,500 bond, conditioned that the product be sorted and handpicked under proper supervision.

5841. Adulteration and misbranding of vinegar.

Substantially the same as No. 5833.

5842. Adulteration and misbranding of vinegar.

Substantially the same as No. 5833, with the exception that the article was labeled "Pure Cider Vinegar."

5843. Adulteration and misbranding of gelatin.

An article labeled "Special W. Gelatine" was held to be misbranded and adulterated because the article was a mixture of gelatine and zinc. On October 2, 1917, claimants having consented, the article was released to them upon payment of the costs of the proceedings and under good and sufficient bond, in conformity with section 10 of the act.

5844. Adulteration and misbranding of gelatin.

Substantially the same as No. 5843.

5845. Adulteration and misbranding of gelatin.

Substantially the same as No. 5843. Bond, \$500.

5846. Adulteration and misbranding of oats.

An article sold as oats, but containing wild oats, weed seeds and screenings, was held to be adulterated and misbranded. On August 18, 1917, claimants having consented, the article was released to them upon payment of the costs of the proceedings and under \$15,000 bond, in conformity with section 10 of the act.

5847. Adulteration and misbranding of oats.

Substantially the same as No. 5846. Bond, \$5,000.

5848. Adulteration and misbranding of oil of birch.

Substantially the same as No. 5810. Bond, \$100.

5849. Adulteration of oats.

The presence of dirt, screenings and weed seeds in oats was held to constitute adulteration. On August 20, 1917, claimants having admitted the averments of the libel, the

Wilson's Certified Brand Canned Peas

The best you ever tasted
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FLAVORY, tender green peas—the very finest grown—picked when just right for the table! You will say—"I never tasted such good peas"—when you try Wilson's Certified Brand.

Only peas of uniform size—plump, full-flavored and fresh from the vines—are good enough to win Wilson's Certified Brand—the label of perfect quality.

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Wilson's Certified Brand canned foods and table specialties possess such a high degree of excellence that we place our "money back" guarantee right on the label.

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CHICAGO

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Sweet Corn	Raspberries
Green Peas	Strawberries
Tomatoes	Catsup
String Beans	Chili Sauce
Beets	Jellies
Pork and Beans	Jams
Pumpkin	Preserves
Leaf Spinach	Peanut Butter
Giant Asparagus	Mince Meat
Asparagus Tips	Olives
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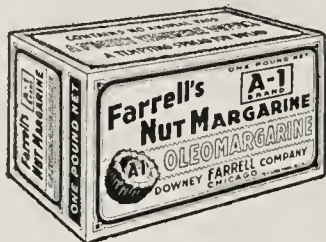
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FARRELL'S A-1 Brand has stood the test through the hottest months of Summer. We stand ready at all times to prove this statement.

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product was delivered to them upon payment of the costs of the proceedings and under \$8,400 bond, in conformity with section 10 of the act, conditioned that the product should be cleaned under proper supervision.

5850. Adulteration of gelatin.

Gelatine, containing an excessive amount of zinc, was held to be adulterated. On August 15, 1917, claimants having admitted the allegations, the product was released to them upon the payment of the costs of the proceedings and under \$5,000 bond, in conformity with section 10 of the act.

5851. Adulteration of gelatin.

Substantially the same as No. 5851. Bond, \$2,000.

5852. Adulteration and misbranding of elixir iron, quinine and strychnine.

An article labeled as above was held to be adulterated because it was sold under a name recognized in the National Formulary and differed from the standard of strength, quality and purity, as set forth by the National Formulary, and misbranding was alleged because of the false statement that it contained 29 per cent alcohol, whereas it contained only 16.8 per cent alcohol. On October 3, 1917, the defendant pled guilty and was fined \$20.

5853. Adulteration of elixir iron, quinine and strychnine.

An article labeled as above was held to be adulterated because it differed from the standard of strength, quality and purity as set forth by the National Formulary, as it was sold by a name recognized in said Formulary. On October 8, 1917, the defendant pled guilty and was fined \$20.

5854. Adulteration of solution of citrate of magnesia.

Adulteration of an article labeled as above was alleged because it was sold under and by a name recognized in the United States Pharmacopoeia and differed from the standard of strength, quality and purity as set forth in the Pharmacopoeia. On October 9, 1917, the defendant pled guilty and was fined \$20.

5855. Adulteration of solution of citrate of magnesia.

Substantially the same as No. 5854.

5856. Misbranding of elixir of iron, quinine and strychnia.

Misbranding was alleged because of the false statement on the label that it contained "Alcohol 12 per cent, each fluid ounce contains tincture citrochloride of iron, 24 minims; quinine sulphate, 2 grains; strychnine * * *, glycerine, q. s.," whereas it contained 23.4 per cent of alcohol by volume, iron equivalent to approximately 42 minims tincture citrochlorid of iron, approximately 4 grains of quinine sulphate, and no glycerine; and because it contained alcohol and the label on the bottle failed to bear a statement of the proportion or quantity of alcohol contained therein. On September 26, 1917, the defendant pled guilty and was fined \$20.

5857. Adulteration and misbranding of chloroform liniment.

Adulteration of an article labeled as above was alleged because it fell below the standard of strength, quality and purity as set forth in the Pharmacopoeia, as it was sold under and by a name recognized in the United States Pharmacopoeia, and misbranding was alleged because of the false statement on the label that the article contained "48 per cent absolute Alcohol by Volume and 144 Min. Chloroform per fluid ounce," whereas it contained 63.4 per cent of absolute alcohol by volume and 54.4 minims of chloroform per fluid ounce, and because the label failed to bear a statement of the quantity or proportion of alcohol and chloroform contained therein. On September 27, 1917, the defendant pled guilty and was fined \$20.

5858. Adulteration of chloroform liniment.

Adulteration was alleged because the article fell below the standard of strength, quality and purity as set forth in the United States Pharmacopoeia, and because the standard of strength, quality and purity of the article was not declared on the container thereof. On October 5, 1917, the defendant pled guilty and was fined \$20.

5859. Adulteration and misbranding of elixir orin, quinine and strychnine; and chloroform liniment.

The first article was held to be adulterated because it was sold under and by a name recognized in the National Formulary, and differed from the standard of strength, quality and purity as set forth in the National Formulary. Misbranding was alleged because of the statement on the label that it contained "Alcohol 25 per cent * * * each teaspoonful contains half grain quinine alkaloid, 1 grain Iron Pyrophosphate," whereas it was found to contain 30 per cent alcohol, and each teaspoonful contained approximately 0.27 grain of quinine alkaloid and 1.3 grains of iron pyrophosphate, and the standard of strength, qual-

HEBE

—and its place among foods



PUBLIC attitude towards alternative foods has, during the past few years, undergone a complete change.

No longer is there resistance towards the new product to eat or to cook with, when honestly made and properly labeled, for the public has come

to realize the important part these new foods are playing in the economic life of the world and to accept them for their true value.

Food scientists, encouraged by this attitude of an enlightened public, have steadily been adding to the food supply of the country by creating new and variable foods out of an unchanged or diminished supply of raw materials.

One of the latest of these new foods to be offered to the public is HEBE. It is sold under this trade name for just what it is, as stated plainly on the label—"a compound of evaporated skimmed milk and vegetable fat." It contains all the nutritive qualities of the separated milk combined with pure, refined edible fat of the cocoanut—nothing else.

The production of HEBE utilizes a largely wasted by-product of the dairy industry, skimmed milk, and a vegetable fat of recognized food value, whose advantages in food products have only been fully realized in the past few years.

In the field of liquids used in cooking and baking, HEBE has created its own place just as vegetable shortenings have made a place for themselves in their field.

HEBE is made by an exclusive method, requiring condenseries of the latest modern equipment, where every sanitary advantage may be had. It is sealed airtight and sterilized. It contains 7.8% fats, 17.7% non-fat milk solids and its fuel value is 663 calories per pound.



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ity and purity of the article was not declared on the container thereof; and also because the article failed to bear a statement of the quantity or proportion of alcohol contained therein. Adulteration of the chloroform liniment was alleged because it was sold under and by a name recognized in the United States Pharmacopoeia and fell below the standard strength, quality and purity as set forth in the Pharmacopoeia. Misbranding was alleged because of the false statement that the article contained "144 Minims Chloroform to ounce," whereas it contained 26.4 minims to the ounce. On September 26, 1917, the defendant pled guilty and was fined \$40.

5860. Adulteration and misbranding of chloroform liniment and adulteration of elixir iron, quinine and strychnine.

Substantially the same as No. 5859, with the exception that there was no alcohol in the elixir iron, quinine and strychnine.

5861. Adulteration and misbranding of chloroform liniment and adulteration of solution of citrate of magnesia.

Adulteration of the chloroform liniment was alleged because it was sold under and by a name recognized in the United States Pharmacopoeia, and differed from the standard of strength, quality and purity as set forth in the Pharmacopoeia, and misbranding was alleged because of the false statement "Chloroform Liniment U. S. P. * * * containing * * * 144 min. chloroform per fluid ounce," whereas it contained but 96 minims of chloroform to the fluid ounce, and because it failed to bear a statement of the proportion or quantity of chloroform contained therein. Adulteration of the solution of citrate of magnesia was alleged because it was sold under and by a name recognized in the United States Pharmacopoeia and differed from the standard of strength, quality and purity as set forth in said Pharmacopoeia. On October 8, 1917, the defendant pled guilty and was fined \$40.

5862. Adulteration and misbranding of chloroform liniment.

Adulteration was alleged because the article fell below the standard of strength, quality and purity as set forth in the United States Pharmacopoeia, and misbranding because the article failed to bear a statement of the quantity or proportion of alcohol and chloroform contained therein. On September 28, 1917, the defendant paid guilty and was fined \$20.

5863. Adulteration and misbranding of chloroform liniment and adulteration of solution of citrate of magnesia.

Adulteration of the chloroform liniment was alleged because it was sold under and by a name recognized in the United States Pharmacopoeia, and differed from the standard of strength, quality and purity as set forth in the Pharmacopoeia, and misbranding was alleged because it was labeled "Each Fluid Ounce Contains * * * Chloroform 144 Minims," whereas it contained 96 minims of chloroform to the fluid ounce. Adulteration of the solution of citrate of magnesia was alleged because it fell below the standard of strength, quality and purity under which it was sold. On October 2, 1917, the defendant pled guilty and was fined \$40.

5864. Adulteration of chloroform liniment.

Adulteration was alleged because the article fell below the standard of strength, quality and purity as set forth by the U. S. Pharmacopoeia, under which it was sold. On October 3, 1917, the defendant pled guilty and was fined \$20.

5865. Adulteration and misbranding of elixir iron, quinine and strychnine.

Substantially the same as No. 5852, with the exception that it contained 19.8 per cent of alcohol.

5866. Adulteration and misbranding of chloroform liniment.

Substantially the same as No. 5857, with the exception that it contained 54 per cent of alcohol and 73 minims of chloroform.

5867. Adulteration and misbranding of elixir iron, quinine and strychnine.

Adulteration was alleged because it differed from the standard of strength, quality and purity as set forth in the National Formulary, under which it was sold, and misbranding was alleged because the article contained alcohol and did not bear a statement of the quantity or proportion of alcohol contained therein. On October 23, 1917, the defendant pled guilty and was fined \$20.

5868. Adulteration and misbranding of chloroform liniment.

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Loganberry

The favorite berry flavor, sealed in vials. A wealth of fresh fruit taste.



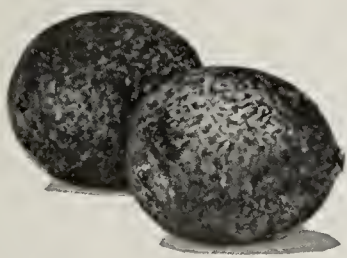
Pineapple

We use a whole pineapple to make the flavor used in one hospital package.



Mint

Made from fresh mint leaves and bottled. Makes a refreshing mint jell.



Lime Fruit

Makes a tart, green jell.

The U. S. Food Administration has placed gelatine preparations in the essential class for sugar allotment, where they are used only for hospitals and similar institutions. This because of their importance in the hospital dietary.

Such packages must bear a special label, limiting their use to sick and convalescent people.

Jiffy-Jell

Has long been made in special hospital size. Each package makes one quart of jell.

All the fruit flavors are made direct from the fresh, ripe fruit itself. All come in liquid form, in sealed glass vials—a bottle in each package.

The flavors are abundant. The vial keeps them fresh. So Jiffy-Jell dainties taste like fresh fruit creations.

Our hospital size now bears the special Food Administration label.

Each package comes fully sweetened, so no sugar need be added. Simply add boiling water, then the flavor from the vial.

The Supreme Gelatine Food

Jiffy-Jell is the only quick gelatine dainty with true fruit flavors in sealed vials. And the finest fruit flavors are otherwise impossible.

It is the only like product made with Waukesha Gelatine—a super-grade which we now supply the government in million-package lots. The home size makes a pint of jell—enough to serve six. The hospital size makes a quart of jell. Both sizes come in ten flavors, for desserts, for salads and for garnish jell.

There is no other form of dessert so economical yet so fruity and appealing.



Ten Flavors In Glass Vials

*One in Each
Package*



Mint
For Mint Jell
Lime
For Salad Jell
Raspberry
Cherry
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Strawberry
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The same high quality is found in Price's

Lemon, Orange, Raspberry and Strawberry**PURE FRUIT EXTRACTS****Price Flavoring Extract Co.****CHICAGO, ILL.****Seedless Prunes.**

It is reported that the seedless prune is to soon become a reality. The great demand for prune seeds or pits to make charcoal for the gas masks of United States soldiers has caused the fruit to be seeded in California and the pits sacked and shipped east.

Seedless prunes will be sold in packages like raisins in the future, so grocerymen say.

Substantially the same as No. 5857.

5869. Adulteration and misbranding of gelatin.

Adulteration and misbranding was alleged because the article contained glue and was sold as gelatin. On September 15, 1917, claimants having consented, the product was released to them upon payment of the costs of the proceedings and under \$500 bond, in conformity with section 10 of the act.

5870. Adulteration and misbranding of oil of birch.

Adulteration and misbranding was alleged because the article had been mixed and packed with synthetic methyl salicylate and was sold as oil of birch. On September 6, 1917, claimant having consented, the product was released to him upon payment of the costs of the proceedings and under \$200 bond, in conformity with section 10 of the act.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912,

Of American Food Journal, published monthly, at Chicago, Illinois, for October 1, 1918.

State of Illinois, County of Cook, ss.

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared L. M. Donat, who, having been duly sworn according to law, deposes and says that she is the Business Manager of the American Food Journal, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post office address—

Publisher, R. G. Gould, 15 S. Market St.

Editor, R. G. Gould, 15 S. Market St.

Managing Editor, L. M. Donat, 15 S. Market St.

Business Manager, L. M. Donat, 15 S. Market St.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

Anne V. Gould, 609 Cherry St., Winnetka, Ill.

Harold F. White, 108 S. La Salle St.

Robert G. Gould, 15 S. Market St.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

There are none.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is —. (This information is required from daily publications only.)

L. M. DONAT,
Business Manager.

Sworn to and subscribed before me this 2nd day of October, 1918.
(Seal.)

GLADYS FREEMAN.
(My commission expires Dec. 22, 1921.)

Dehydration—Food Saver— Coming Industry

With a History as Old as the Pyramids, Food Drying,
Born Again, Develops as a New Enterprise
With a Promising Future

By Wm. G. Davies

WHAT will dehydration accomplish in the way of facilitating the feeding of the vast crowds of starving or semi-starving people in the war devastated areas of the world? "Is the dehydration of foods for commercial purposes a practical business proposition in which one can engage with a reasonable assurance of making money?"

These and similar questions are being fired at the heads of food experts with greater and greater frequency as the shortage of food in Europe and the high cost of food in all countries bring to the people a keener realization of the necessities of even more stringent measures of conservation. In some cases the questions come from the scientific or altruistic person who is seriously concerned with the economic problems arising from the peculiar food conditions of the day, while in other cases the question comes from the individual of little or great means who has had the dehydration problem presented to him in the form of a "get-rich-quick" scheme.

Let us ignore for this time the very interesting ancient history of dehydration which carries us back to the days of Egypt's glory and presents to us the greatest of all dehydrated samples — the Egyptian mummies, for modern people are not so much concerned with the preservation of the remains of their citizens for exhibition purposes a thousand or more years hence as they are for the preservation of the well fed and healthy condition of the masses of today.

Great Food Waste

The United States Government reports tell us that 15 per cent of all the foodstuffs grown in this country spoil or is wasted before it reaches the markets, and 25 per cent of all the food that reaches the market spoils or is wasted before it reaches the consumer.

It is known also that during the war large supplies of food failed to reach the places where they were needed be-

The approximate dry weight of 100 pounds of raw material is as follows:

Vegetables		Lbs.
Beets	7½ to 10	
Beans	8 to 10	
Cabbage	5	
Carrots	8	
Cauliflower	10 to 12	
Celery Root	10	
Celery Stalk	4	
Corn	18 to 20	
Parsnips	11	
Peas	10	
Potatoes (White) ..	12½ to 16	
Potatoes (Sweet) ..	25	
Pumpkins	15	
Rhubarb	4	
Spinach	4 to 5	
Squash	9	
Tomatoes	4½ to 5	
Turnips	7 to 8	

Fruits		Lbs.
Apples	12 to 15	
Apricots	18 to 20	
Blackberries	16 to 20	
Cherries (Sour)	15 to 18	
Cherries (Sweet)	22 to 26	
Loganberries	17 to 22	
Peaches	16 to 20	
Raspberries	17 to 23	

cause the bulk was greater than the capacity of the carrying agents.

To the twofold problem of saving a

large part of the food now wasted and saving shipping space by increasing the amount of food value of each shipment while the weight and bulk of the shipment is reduced, many food experts now claim that dehydration presents the true solution.

While the exact figures are not now available it is known that hundreds of thousands of pounds of dehydrated vegetables and fruits were shipped to American and allied soldiers in Europe during the war and that the taste and food value of the dehydrated product was practically the same as the taste and food value of the original fresh product. It is known now that Germany helped to stave off the day of atonement by dehydrating foodstuffs which could not otherwise have been saved.

A view of a modern dehydration plant in operation, a number of which are now to be seen in this country, would convince the most skeptical that this new process of food conservation is not only here to stay but that it is destined to grow immensely and play a great part in the food economy plans of the future. The particular plant described here must remain nameless because of government regulations — but it is typical.

Machines Handle Product

The first sight to impress the visitor was that of many carloads of potatoes which were arriving and being received into the plant. The potatoes, it was said, were of first quality.

They were sorted automatically into three sizes and automatically conveyed to the storage bins inside the plant. From the bins the potatoes are released in just the quantity desired into a flume through which they are carried to the washer. After being thoroughly washed by machinery they drop to a conveyor which carries them to the peeling machine.

As the tubers, all peeled and white,

come from the peeler they drop to an inspection conveyor and travel between two rows of women who pick out the potatoes with eyes and those that show specks. These are trimmed by hand of their eyes and specks and thrown back on the conveyor from which they are fed automatically into the slicing machine. The automatic slicers spread the thin, evenly cut slices over the trays and the conveyor then takes them to the blancher.

Blanching, accomplished by either steam or hot water, is said to be necessary to keep the potatoes from discoloring during and after the drying process.

After leaving the blancher the trays of sliced potatoes are carried in elevators to the floor on which the dryers are located and, in the same trays, are placed in the dryers. While there are a number of drying systems, each of which is claimed to be the best and discussion of that point cannot be entered into here, it is sufficient to say that in this plant the drying out is accomplished by intermittent drafts of air heated to a given temperature and controlled by mechanically operated dampers.

After the drying was accomplished, which took in this case about three hours, samples of each lot of potatoes were sent to the laboratory to determine the exact amount of moisture left. This is necessary, it was said, to insure a low enough moisture content to guarantee the keeping quality of the product.

After leaving the dryer the product is carried to a storage room through which a predetermined amount of warm dry air is allowed to circulate. This process equalizes the moisture conditions of the product and also keeps it from reabsorbing moisture on damp days. From the storage room to packing bins, where they receive their final inspection, the dried potatoes take their last process trip and are then packed in tin cans which are soldered and later lacquered as an extra precaution.

But while the sliced potatoes are being dried the peelings and the culls are being put through another process which results in the extraction of the starch. Inquiry elicited the information that this by-product adds about 25 per cent to the normal profits of the plant.

In passing through this plant one is impressed with the smoothness of operation in both the human and mechanical elements; the very apparent skill and thorough knowledge of foods and food preservation of those who have immediate charge of the handling of the product and the evident efficiency and thorough business knowledge on the part of the business heads of the institution.

A short talk with these men convinces one that as a conservation measure dehydration, although yet in its infancy, is already a success and is slated by the necessities of the times for rapid

growth and development, and that as a commercial proposition it is a success if, as in all other businesses, the elements which enter into the cost of securing the raw material, the expense of producing the finished material and the marketing of the same are carefully watched.

For the benefit of those who are planning to enter the dehydration field

Dehydration Standard

To obtain a uniform and high grade product necessitates the use of good green vegetables and a system of processing according to certain fundamental principles.

To these requirements add government license and consistent inspection and we are assured of a process which will give the public general satisfaction and will materially improve the food supply possibilities of the country.

1. All vegetables, used for dehydration, shall be of good quality, free from disease, sun scald, frosting, or any other injury whereby they are rendered unsuitable for table use.

2. All vegetables so used shall be thoroughly washed, and other necessary treatments, as peeling, trimming, blanching and cold-dipping, shall be performed with the same care as that used when preparing vegetables for the table or for canning.

3. No detailed process of drying, shall be specified, but the process shall be such that the product will not deteriorate while in the dryer from spoilage, either as a result of the action of yeast, molds or other micro-organisms or from physiological causes, and will not be affected in color or flavor by seorching or otherwise altered so that they will not return to approximately their natural form and appearance on being soaked in water.

4. Products which are blanched or parboiled before dehydration shall be dried to a moisture content not exceeding 10 per cent. Dehydrated tomato shall not contain more than 8 per cent moisture.

5. All dehydrated vegetables shall be free from insect eggs or cocoons or other insect deposits, and so far as practicable shall be free from molds or other organisms of decay.

either as investors of capital or as operators of their own plants let us give this word of warning—consider well the step before making it. Look

at both the food conservation and the business side of it. Companies which are being formed to exploit a particular theory of dehydration and which are not headed by business men who are carefully taking into consideration the cost and facility of securing the particular raw material that is to be dehydrated, the cost of building or securing a factory, the cost of the process and all the elements of marketing the finished product, are doomed to failure, as a good theory and a good dehydration machine is not all that is needed.

If one desires to know just what his prospects for success are in entering the dehydration field he must first figure whether or not the location that he is thinking of is one where he can readily secure sufficient supplies of raw material at a reasonable cost. And right here let us say that dehydration adds nothing to the quality of the food. If one desires to put out a first grade dehydrated article, he must secure first grade raw material.

Second, he must either figure the cost of erection of a new building, adding to his cost of operation interest on the money invested, or he must figure interest and depreciation if he already owns a suitable building.

Third, he must take into consideration the cost of labor in the particular locality in which he intends to operate.

Fourth, he must decide upon his market, the cost of creating a demand by advertising and selling methods, the cost of packing or packaging goods, and the cost of shipping.

One must figure closely on using all the scraps and otherwise waste material in turning out by-products. The by-product depends entirely upon the nature of the food to be dehydrated and may be starch, sugar, vegetable colorings, stock or chicken feeds or fertilizer.

If one is considering the dehydration of foods to go on the shelves of the grocer for general distribution one must remember that the general public is as yet uneducated in the use of food in this form and that a sane and well thought out plan for overcoming the housewives' prejudice must be devised and carried out.

All of this takes capital and while considering the capital end of the proposition don't forget that the harvest time for the particular product that is to be dehydrated lasts only a few weeks and that if the dehydration plant is to be kept running most of the year the raw material sufficient to keep the plant going must be purchased and stored during the harvest time and this means additional capital.

In the above we have taken the problem of commercial dehydration for consideration and it is, as one can see, a big proposition. The problem of establishing a small dehydration plant simply for the conservation of comparatively small quantities of food stuffs that would otherwise go to waste and the conversion of this into stock and chicken feeds or fertilizers is a separate problem that must be taken up by the individual.

View of Complete Dehydration Process



No. 1. Potato Bins and Flume.

No. 2. Conveyor Taking Potatoes to Peelers.

No. 3. Inspection of Peeled Product for Specks and Eyes.

No. 4. Machine Sliced Potatoes Spread on Trays.

No. 5. Final Inspection of Dehydrated Product.

No. 6. Product Coming from Blancher.

No. 7. On Trays Ready for the Ovens.

No. 8. Finished Product Being Packed in Cans.

Pennsylvania Carries War To Egg Substitutes

Officials Condemn Them for Wrong Labeling and as Uneconomical as Substitute Agents in Baking

By Professor Charles H. LaWall

ONE of the most reprehensible ways of making money is to take some common, everyday substance, disguise or alter its appearance in some way, make a lot of exaggerated statements regarding it and then sell it for about ten or fifteen times its market value, extolling it as an economical substitute for some expensive article. There has been no preparation of this class, within recent years, that has sprung into prominence with such rapidity as the so-called egg substitutes and with so little merit or legitimate warrant for their manufacture and sale.

To understand the reason for the appearance of these products on the market, it is necessary to consider what part eggs play in cooking apart from their nutritive qualities, for it must be evident, even to an untrained observer, when he stops to reflect, that from 2 to 4 ounces or less of a yellow powder cannot possibly represent the nutritive value of 2 or 3 dozen eggs. When eggs are used in doughs, batters, etc., it is usually for the sake of the leavening effect which they contribute or for their coagulating or thickening properties. The leavening property is due to the viscosity of the egg, which entangles air bubbles and holds them in the batter or dough until the subsequent heat of baking sets or coagulates the egg and brings about a permanent condition of lightness in a product which has been beaten or mixed with baking powder or other leavening agent, or in an article containing no baking powder, as a custard.

Eggs Indispensable

Eggs are, therefore, considered almost indispensable in most culinary operations, and when, as has been the case for several years past, the price of eggs remains steadily high, even in the seasons when they are supposed to be plentiful, and in seasons of scarcity soars to a point almost prohibitive for those in moderate circumstances, it is little wonder that the consuming public, ignorant of the real facts in the case, are led astray by the specious labels and extravagant claims and duped into purchasing articles which are sold under the pretext of furthering economy, while really adding to the high cost of living on account of the small value really received for the money expended.

In order to understand the table of composition, it is necessary to discuss

the composition of the egg itself. Mixed whole egg content, white and yolk, con-

The Wonderful Egg

PONDERING over God's work, the chemist finds that the egg contains lecithin, phosphorized fat, phospholipins, phosphatids, conalbumen, ovomucin, ovomucoid, ovovitelein, ovalbumins, glycine, alanine, valine, leucine, proline, phenylalanine, aspartic acid, glutamic acid, serine, tryptophan, histidine, arginine, lysine, tryptophan, calcium, magnesium, potassium, sodium, phosphorus, chlorine sulphur, iron haematogen, and so on down the long line of complex structures from which the body of a living animal emerges.

The iron of the egg is, in itself a work of wonder, furnishing all of this element needed for normal nutrition in a form that cannot be replaced by the iron of medicines or mineral waters.

The iron protein compounds of the egg furnish the material from which the haemoglobin of the blood is actually made. The richness of the egg yolk in this food iron as well as its richness in the complex phosphorus and calcium compounds upon which life, development and health depend so much, inspires an admiration for the egg as God makes it, which man never yet succeeded in putting into a beautifully labelled package of dyed cornstarch.

The Pennsylvania Department of Agriculture must have realized the awe-inspiring difference between an honest egg and the miserable artificial substitutes which it has so scathingly denounced.

contains about 74 per cent water, 15 per cent protein, 10 per cent fat and 1 per cent ash. Commercial dried egg, which

is a legitimate market product and which sells at a price corresponding to about 40 cents a dozen for fresh eggs, has about the following composition:

	Fat	Protein	Ash
Dried egg..	30.00%	45.00%	3.00%

The difference between the sum of the above figures and 100 per cent is water, which is retained by the egg in the process of drying.

A whole egg will average slightly less than one-half ounce of dried egg, equivalent to about four rounded teaspoonfuls.

In the table of composition of the egg substitutes, the difference between the sum of the fat, protein and ash and the theoretical 100 per cent consists of some water (averaging about 10 per cent), but principally of carbohydrates, starch (corn, rice, tapioca, potato), or sugar, often from the dried skim milk which is a constituent of a number of them, as will be seen by the claims for composition. A real egg contains no carbohydrate, neither does it contain coal tar color.

Value of Eggs

An egg of average size has a nutritive value of 75 calories (a calorie is the unit of food value and corresponds to the energy or heat necessary to raise the temperature of 1 lb. of water 4° F). Three dozen eggs would have a total food value of 2,700 calories. A mixture of the ingredients commonly used in these egg substitutes has a nutritive value of 100 calories for each ounce. Therefore, 4 ounces, the largest amount found in any one of the packages, would have a nutritive value of less than one-sixth that of the number of eggs it claims to replace. In most of them the ratio was less than this.

To replace any article of the daily dietary with a product costing, we will say, one-third as much, but having one-sixth or one-eighth of the nutritive value, is certainly not in the interests of the consumer nor a real blow at the high cost of living.

In some few of the products great stress is laid upon the fact that real egg is present. In several, the proportion of egg may reach 50 per cent, but these are rare indeed, and are appearing on the market only on account of the ruling of several of the food departments of other states, in which a product may not use the syllable "egg" in the title, unless the product actually contains at

least 51 per cent of egg. Even in these few instances when egg is present, the element of deception still persists, for the directions for use state that one teaspoonful of the powder will replace one egg in contradiction of the incontrovertible fact that the most concentrated form of dehydrated egg requires about four teaspoonfuls of the material to represent one egg.

The coloring matter which is present is another element of deception for which there can be no legitimate defense. Its purpose is to make the cooked or baked article possess an appearance of egg richness, which is not warranted by the composition. No special criticism is directed against coal tar color in this connection. It makes no difference whether coal tar color or vegetable color is used, *its purpose is deceptive and its presence should not be tolerated.* The names of the products, when not actually misleading, are silly or meaningless, and if strung together would serve as a college yell.

The following list of more than forty egg substitutes has been collected under the direction of Dairy and Food Commissioner Foust and submitted for analysis and comment. Almost all of them were found on sale in the State of Pennsylvania. Several, however, were sent in by manufacturers who desired information concerning the legality of their products. The names of the substitutes, manufacturers' names, claims of composition, etc., were as follows:

AGG-O-LA POWDER (egg substitute). Carton printed in black and red ink. "Pure and wholesome for cooking and baking." The Euclid Food Products Co., Brooklyn, N. Y. 4 oz. net weight. "Use in place of 3 dozen eggs. Artificially colored. Price, 35 cents. A pure food product, conforming with all pure food laws. Always ready for use. Use about $\frac{3}{4}$ teaspoonful for each egg called for in the recipe."

ALGO. The Egg-O Co., Mnfrs., Baltimore, Md. In white package printed in red and black. "To use in place of EGGS in baking and cooking. Contents of package instead of 12 eggs. A mixture artificially colored with pure certified color." $1\frac{3}{4}$ oz., 15 cts. "One level teaspoonful instead of 1 egg. There is nothing like Algo."

ALLENEGG. Allenegg Mnfr. Co., Binghamton, N. Y. Carton, black on yellow background. "Baking and cooking without eggs. Egg compound. $1\frac{1}{2}$ oz., 10 cts. One rounding teaspoonful for each egg called for."

Madam Blumer's Egg-Saver. Lincoln Chemical Works, Lincoln Ave. and Roscoe Blvd., Chicago, Ill. Carton, black and red inks on yellow background. Cuts of basket of eggs, hen and fae-simile of package. "A vegetable food product. Value 48 eggs cost 25 cts. Equal to 48 eggs. Gives better results than eggs. Will answer the purpose of 48 eggs *except in nutrition.*" (Last three words in small type.) "Price, 25 cts., worth \$1.00. 4 oz. One pinch of Egg-Saver represents one fresh hen's egg. A mustard spoonful represents 2 eggs."

ECC-KON-O-MY, Mnfd. for National White Cross League, Chicago. Green label and green print. "Pure and wholesome. Contains powdered whole eggs, powdered milk (less butter fat), a cereal product and baking powder. 4 oz. 25 cts. For cooking and baking only. Use one teaspoonful for each egg called for in recipe."

ECC-O-GENE. (Stuart.) Wright Imp. & Exp. Co. (Agents), N. Y. Carton, red and blue on white. "For replacing eggs in cooking, etc. Use this package in place of 36 eggs. Made of corn

substitute for 12 eggs. Level teaspoonful for each egg called for. Artificially colored."

EGGINE. Chas. T. Morrissey & Co., Chicago, Ill. Distributed by Penn Specialty Co., Hanover, Pa. Labeled in black and red on yellow paper. Cut of hen's head and outline of egg. "Unsurpassed for purity and economy. Artificially colored. Net wt., 4 oz.; price, 25 cts. Takes place of 3 dozen eggs. Use about $\frac{3}{4}$ teaspoonful for each egg called for in recipe."

Egg-Kon-O-My. National White Cross League, Chicago, Ill. Carton, green print on pale green background. "Pure, wholesome, economical. Use in place of eggs for cake, noodles, etc. Contains powdered whole eggs, powdered milk (less butter fat), a cereal product and baking powder, $3\frac{3}{4}$ oz. net wt., 25 cts. Use one teaspoonful for each egg called for in the recipe."

EGG-LESS. The Thomas Mnfg. Co., Dayton, Ohio. Black print on white. "A wonderful preparation used instead of eggs in baking, etc. Saves about 45 eggs. Manufactured from cornstarch, skim milk powder, milk casein, powdered eggs and rice flour, bicarbonate of soda and certified color. $4\frac{1}{2}$ oz., 35 cts. Instead of each egg called for use 1 level teaspoonful of Egg-Less."

EGGNIT. C. H. Stuart & Co., Newark, N. Y. Word "Eggnit" printed in shape of an egg. Black and red printing. "A pure food product for baking and cooking. Artificially colored. Wt., $1\frac{1}{2}$ oz. Price, 10 cts. Use $\frac{3}{4}$ teaspoonful instead of 1 egg. In making custards use one-half the usual number of eggs and the other half Eggnit."

EGGNO. The Newton Tea & Spice Co., Cincinnati, Ohio. Lithographed in red, yellow, blue and white. "To take the place of eggs in baking and cooking. Artificially colored. $3\frac{1}{2}$ oz., 25 cts. Far superior to the usual egg substitutes. Use package in place of 3 dozen eggs. Result of scientific research. Teaspoonful for each egg."

EGG-NU. The Abner Royce Co., Cleveland, Ohio. Labeled in black on white. "Substitute for egg. Pure and wholesome and good, containing the nutriment of eggs. Does not deteriorate. Artificially colored. 3 oz. 25 cts. Equals 2 doz. eggs. One scant teaspoonful for each egg."

Egg-O. J. M. Pitkin & Co., Newark, N. Y. Printed in black and red. Cut of egg at each upper corner. "A wholesome mixture, chiefly of corn and milk products, to be used instead of eggs in baking and cooking, colored with certified colors. Price, 10 cts. $1\frac{1}{2}$ oz. net wt. Takes the place of 12 eggs. Use level teaspoonful of Egg-O in place of each egg."

ECC-O-GENE. (Stuart's.) Wright & Co., 136 Water St., N. Y., Agts. Blue and red print on white. "Made from corn and milk products. Eggs substitute. Equal to 36 eggs. Equal to eggs at 9 cts. a dozen. Artificially colored with certified color. 25 cts. Use $\frac{3}{4}$ teaspoonful for each egg."

EGGOLA. Wixon Spice Co., Chicago, Ill. Red print on yellow background. Word "egg" prominent. "A substitute

Washington View of Egg Substitutes

Misbranded "egg substitutes" which contain no egg, and have little food value, have been investigated by Federal food inspectors and action has been instituted by the Bureau of Chemistry, United States Department of Agriculture, in those cases which are in violation of the Federal Food and Drugs Act, according to the report of the Chief of the Bureau of Chemistry, recently issued.

Analyses of many of the so-called "egg substitutes" show that they consist essentially of a mixture of starch and baking powder, colored yellow with a coal-tar dye to imitate egg color, and a few contain added casein, which is an ingredient of milk. The food value of such preparations is far inferior to that of eggs. Baking and cooking experiments made in the Bureau of Chemistry show that the substitutes do not have the effect of eggs in cooking or baking.

Manufacturers or others who ship or sell misbranded "egg substitutes" within the jurisdiction of the Federal Food and Drugs Act will be prosecuted, say the officials in charge of the enforcement of that law.

and milk products. Colored with certified color. Keeps indefinitely. $3\frac{1}{2}$ oz. 25 cts. Use $\frac{3}{4}$ teaspoonful for each egg called for."

EGGATINE. The Royal Palm Co., Pittsburgh, Pa. Carton, black on yellow. "A substitute for eggs. Compound of cornstarch and casein. Artificially colored. Contents of package used in cooking in place of 3 dozen eggs. Costs about $\frac{1}{2}$ as much as eggs. $\frac{3}{4}$ teaspoonful for each egg."

EGGETTE (egg substitute). Bestever Products Co., Chicago, Ill. Printed in black on yellow paper. Cut of chick and egg. "Pure, healthful, nutritious. Always fresh. Guaranteed pure food product. The original egg substitute. Net weight, $1\frac{1}{2}$ oz., price, 10 cts. A

for eggs. Pure, wholesome, convenient and much cheaper than eggs. Composed of products of egg, cereal and milk, artificially colored. $3\frac{1}{2}$ oz. One level teaspoonful for each egg."

EGG-O-LIEU. Webster Co., Sharon, Pa. Printed in red on white. "A scientific compound, wholesome. Takes the place of eggs. A scientific compound of corn, milk and eggs. Harmless coloring. One-fourth teaspoonful for each 2 eggs required." (Price and net wt. not given on package.)

EGGOLINE. S. G. B. Medical Specialties Co., Reading, Pa. Black on cream ground. "Unsurpassed for purity and economy. Use in place of 3 doz. eggs. Made of corn and milk products with certified color. Egg substitute. 4 oz., 25 cts. Use $\frac{3}{4}$ teaspoonful for each egg called for."

EGG-O-NO. The Thomas Mfg. Co., Dayton, O. White envelope, black print. "Use in place of eggs for baking and cooking. Pure, wholesome preparation. Cornstarch, skim milk products, with casein, milk sugar, sodium bicarbonate and certified color. One teaspoonful of Egg-O-No for each egg in recipes."

EGG-O-THRIFT. L. F. Elliot Co., Philadelphia, Pa. Labeled in white on black. Picture of hen and large egg. "A substitute for eggs. Use it in place of eggs for cakes, etc. Made from milk, egg and cereal products. Artificially colored. 4 oz. net, 30 cts. One level teaspoonful for each egg called for."

EGG-SUB. Imperial Tea Co., Harrisburg, Pa. Paper carton, "Egg-Sub" printed in blue on egg-shaped white background. "Use in place of eggs for cakes, ice cream, etc. Made from milk, eggs and cereal products, artificially colored. 4 oz., 25 cts. Use one level teaspoonful for each egg called for."

EGG-VITO. Wendell-Clements Co., Chicago, Ill. In round carton printed in white and brown on yellow and brown background. Cut of laying hen and large egg. "Delicious and nutritious. In every way takes the place of eggs. Made from eggs, milk and cereal products." (No statement of net wt.) "Artificially colored." 35 cts. "Replaces 3 dozen eggs. Level teaspoonful for each egg." Advertising folder states: "Won't spoil, don't waste, and tastes delicious."

EGIS. The Egis Co., Inc., Seattle, Wash. Lithographed in red and green and black on yellow background. "Used instead of eggs in cakes, doughnuts, etc. Composed of certain parts of casein, starch, sod, bicarb. and naphthol yellow. 2 oz., 25 cts. One level measure of Egis for each egg."

EG-NO. Commercial Laboratories, Inc., Newark, N. Y. Label printed black and red. "Pure and wholesome. Making eggs unnecessary. Composed of cornstarch, bicarbonate of soda, skimmed milk powder, milk casein, and milk sugar, with certified colors. Price, 10 cts., net wt. $1\frac{1}{2}$ oz. Use as 1 dozen eggs. Eg-No saves eggs. It is not recommended as a food, but as a food saver. Eggs are used in cakes, etc., not for their food value, but to

produce lightness and color. Eg-No does this at a fraction of the cost of eggs."

EG-SAVE. Eg-Save Co., Buffalo, N. Y. Word "Eg-Save" in white, egg-shaped space against green and yellow background. "Baking and cooking without eggs. Contains powdered milk, cornstarch, flour, carbonate of soda, fresh hen egg albumen and vegetable coloring. Use Eg-Save in place of eggs. 2 oz. Use $\frac{1}{2}$ teaspoonful for each egg called for."

Fletcher's EG-CONSERVER. Fletcher Production Co., Chicago, Ill. Green, red and black on yellow ground. "A compound to be used in place of eggs in cooking. Pure, wholesome. No artificial coloring. Use in place of 3 dozen eggs. 4 oz., 25 cts. For each egg called for use 1 level teaspoonful of the compound."

MAGIC EGG SAVER. Ward & Co., Chicago, Ill. Yellow package; red and black print. "Will serve the purpose of 4 dozen eggs, except in nutrition. Contains maize flour, egg albumen, powdered milk, rice flour, potato flour, sodium chloride, sod. bicarb., amaranth, naphthol yellow, orange yellow. Not a substitute for eggs. 6.5 oz., 25 cts. Use a scant or level teaspoonful for each egg."

"Mary had a little hen,
That acted very queer,
She always laid when eggs were cheap,
But quit when they were dear."

MAGIC EGG SAVER. Sherer Gillette Co., Chicago, Ill. Lithographed in red, gold and blue on yellow background. "A substitute for eggs in baking and cooking. $3\frac{1}{2}$ oz. Use a teaspoonful for each egg called for."

MIRACLE EGG DISPLACER. Standard Supply Co., Reading, Pa. Pasteboard and tin package. Black type on yellow ground. "Pure and wholesome for cooking and baking. Keeps indefinitely. Conforms with all pure food laws. Contains no egg and is artificially colored. A corn-milk preparation. oz., 30 cts. $\frac{3}{4}$ teaspoonful for each egg called for."

NEAR-EGG. Peters Mfg. Co., Ridgewood, N. J. Tall tin can, labeled in blue print on light blue paper. "Wholesome and harmless substitute for EGGS. No eggs used in the manufacture of this product. Colored with certified color." (Net wt. not stated, cost 25 cts.) "One even teaspoonful of Near-Egg for each egg called for."

NO-EG. No-Eg Sales Co., Buffalo, N. Y. "Not an egg product. A substitute for eggs." Yellow background, black print. Picture of winged egg on front of package. "Artificially colored; wholesome and pure. Price, 25 cts., $2\frac{1}{4}$ oz. Use in place of 4 dozen eggs. One-half teaspoonful of No-Eg for each egg called for."

NO-EGG. Repeat brand. W. A. Kittredge Co., Tunkhannock, Pa. White envelope, printed in red and black. "A wholesome preparation which does the work of eggs in cooking and baking. Use as 10 eggs. Cornstarch, skim milk powder, casein, milk sugar, baking soda, and certified colors. One oz., 10 cts." "One teaspoonful of No-Egg in place of each egg."

O-EGG-O. The Penn Specialty Co., Hanover, Pa. Printed in blue and white. "Pure and wholesome. Contains no eggs. Always fresh. Convenient and economical. Guaranteed to conform to state and national pure food laws. Made of products of corn and milk, colored with pure certified color. Net wt., $1\frac{1}{2}$ oz., price 10 cts. Use as 12 eggs. Use a scant teaspoonful of o-EGG-o in a good tablespoonful of milk or water for each egg called for. o-EGG-o makes richer cakes than eggs."

PARAGON EGG SUBSTITUTE. Paragon Products Co., Pen Argyl, Pa. Printed in blue on white. "Nutritious, tasteless and wholesome. Fully equal in baking or cooking to the best fresh eggs. Contents equal to 3 dozen eggs. 25 cts. Use $\frac{3}{4}$ of an even teaspoonful for each egg."

SA-VAN-EGG. The Nacma Co., Chicago. "May be used in place of 3 doz. eggs in cooking and baking only. Saves about $\frac{1}{3}$ the shortening. A delicious and wholesome milk and cereal product to be used in place of eggs."

SAVAEGG. H. C. Royce, Horsham, Pa. Label in black. "Savaegg" printed egg-shaped. "To obtain the thickening effect of one egg use one level teaspoonful of this powder. Derived principally from milk and corn. One level teaspoonful equals 1 egg. Price, 12 cts." Wt. not stated.

SHOBE SPECIAL. Wright Imp. Corp., 136 Water St., N. Y. Unlabeled package.

SNOW-MELLOW. The Hipolite Co., St. Louis, Mo. In cylindrical container; printed in black on violet and white. Label not suggestive. "Makes delicious icings and meringues without eggs; no cooking. 2 ozs., price 25 cts." Word "eggs" not misused on label.

STEWART SPECIAL. Wright Imp. & Exp. Co., N. Y. City. No labeling.

WIZZ-O-LA. Gandolfo-Ghio Mfg. Co., St. Louis, Mo. In white envelope printed in blue and red. Cut of layer cake. "Contents powdered egg. Pure, wholesome, economical. Artificially colored. One level teaspoonful equals one egg." Net wt. nor price stated.

YELCO. The Yelco Pure Products Co., Minneapolis, Minn. Printed in black and red on white and yellow ground, paper box; outline of egg. "A new pure food product for baking and cooking. Use for all baking and cooking only, instead of eggs. Composed of powdered milk, rice flour, bicarbonate of soda, cream of tartar, tartaric acid, powdered tumeric, cornstarch. Net wt. $3\frac{1}{2}$ oz. Use 2 level teaspoonfuls in place of each egg."

As a class, these products are inimical to the welfare of the consuming public and a detriment to the trade in legitimate food substitutes, of which there are many of merit. If an economical housekeeper wants to save the cost of eggs and egg substitutes as well, it may be done by taking 4 tablespoonfuls of milk and a half teaspoonful of cornstarch. This will be equivalent to a

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Effect of Food Control on the Food Supply

The Author of This Paper Is the
Food and Drug Commissioner
Of Indiana and a Member of
The Food Administration
—A Unique Honor

By Harry E. Barnard, Ph. D.



Harry E. Barnard, Ph. D.

FOOD control as a function of government is exercised for the protection of the consumer from fraud and deceit and from the injurious effects of unwholesome foods which uncontrolled would reach the table. In the past twenty years the control of the food supply through federal, state and municipal agencies has reached a state of perfection creditable alike to the official and the manufacturer and distributor. The percentage of adulterated and misbranded samples has steadily decreased, and the quality of the food supply has on the whole as steadily improved. So it was that when some eighteen months ago we learned that we were to win the war with food we were producing foods under well regulated conditions, both as to sanitation and the character of raw material, and we were safeguarding the quality of those foods along the long road between the producer and the consumer.

Some years ago when restraint was new and regulations were viewed with distrust, there was a general feeling that trade would be hampered rather than helped by supervisory control. This impression, not altogether wiped out, was visualized rather strongly when the issues of war made it necessary to restrict the food supply at home that those who were fighting for us, our allies and our own, might be fed.

It was no easy task to change the eating habits of a hundred million free-born people almost over night. It was the harder because at least half our people were producers or lived close to the sources of production and, because they could see around them the

abundance of the last harvest, they gave little heed to the tales of famine and the hunger-call that came from people they did not know. But as their sons became soldiers and sailed away to take their part in the world war, their horizon widened, they understood why food was a munition of war and they obeyed, even to the letter, the regulations of the food administration.

Wheat bread, white and fine, has been our staple food. When wheat was demanded for export in quantities far in excess of our actual reserve supply we had to find a substitute for it. And so the slogan — "Reduce the eat in wheat and meat and toot the tute in substitute."

The word substitute has always sent a shiver down the spine of the food control official. He has held that the real thing was none too good and he has checked in every possible way the introduction of substitute foods. So the war program was rather upsetting both as to his dogmas and his practice. Fortunately for the conservation campaign, and his own stability, no food official imposed on the consumer his personal ideas as to the use of oleo-margarine or glucose or corn flour. On the contrary he most heartily entered the substitute campaign and with his organization and by his example led the way to as real a victory for Hoover's army as that won by our soldiers in the Argonne forests.

Today we are looking back on war. In less than a month the nightmare of triumphant Mars dominating a suppliant world, has faded to the littleness of a bad dream. We are again a peace-

ful people—independent in thought and deed—living our normal lives and eating what we want to eat. The food control measures which grew out of war's necessities are for the most part abandoned. The sugar bowl is back on the table. Meatless days are forgotten. White bread is again the staff of life.

Control and Prices

We have now an opportunity to review the experiences gained in the two types of food control and perhaps to find an answer to the question so often put to us—does food control increase prices, restrict commerce, discourage invention?

There is no doubt that the first regulatory statutes checked the inventive genius of the manufacturers who saw fortunes in the production of honey from glucose, cider vinegar from grain distillates and caramel, strawberry jam from apple stock and anilins. Very probably the price of some staples increased temporarily when fraudulent competition was removed. Markets flooded with cheap and imitation products masquerading under fraudulent labels, are not receptive of pure, high cost goods. Good milk, before sanitary dairy control, sold at the price of the worst milk in the market. And naturally with the removal of vicious competition, the honest product, true to name and certain in quality, earned its reward in stimulated demand and increased values.

But this very condition quickly reversed the upward curve. For capital, no longer fearing unfair competition, sought investment in the food industry.

The manufacture of staple foods increased. Competitive brands became numerous. The best goods for the price won the goodwill of the consumer, with the result that in 1914 food prices were at a minimum and food quality was the highest in history. The reports of the food analyst during the fifteen year period 1900-1915, showed a constantly decreasing percentage of adulteration. The work of the inspector in the field was increasingly fruitless as to the number of samples of adulterated foods he took, and always gaining in value because of the tendency to constructive and helpful work both at the factory and the retail store.

Does Not Check Growth

If food control, fairly administered has checked the development of the food industry, no evidence to that fact is available. On the contrary the amazing progress of the canning industry, from the sardine packer in Maine, who reluctantly accepted inspection only to find in it his salvation, to the corn canner in the central states who had to be forced to pack true sweet corn instead of field corn sweetened with saccharin, most definitely attests the commercial value of food control. The meat packer who once fought federal supervision, now recognizes Uncle Sam's inspectors as his best advertising asset; the baker who worked behind closed doors, now proudly acclaims his plant as a palace of cleanliness and urges his patrons to inspect his white tiled walls, his spotless work rooms, and the health records of his medically inspected employees.

As I look back over nearly twenty years of active control work I find but few laws that have checked development of food industries, or tended to increase food prices. Among these few, one law in particular stands out as a striking example of vicious legislation, deliberately enacted and enforced against one legitimate industry for the purpose of stimulating another. That law is the oleomargarine law on the Federal statute books and its counterpart as it is enforced in many of the states. Oleomargarine legislation, demanded by the dairy interests, to protect them against the assault of illegally sold oleomargarine, has taken the form of revenue legislation and by the imposition of taxes has sought to cripple competition. And for many years a perfectly wholesome food, made of the finest of raw materials in sanitary and inspected factories, has gone to market bearing an indefensible tax or has sought the user under the name of butter through illegitimate channels which would have little reason to exist if the evasion of the tax did not offer handsome profits. And today the housewife who wants a yellow oleomargarine either pays ten cents a pound as a tax for the privilege of pleasing her eye or goes to the trouble herself of incorporating the color in the spread before placing it on her table. But the butter manufacturer is legally authorized to use the same color in the same way and for the same purpose without declaring the

presence of added color or paying any tax for the privilege.

Of course, there is no justice in either case. Added color undeclared adulterates the butter just as it does oleomargarine and the tax is an indefensible burden laid on the working man's table. And the burden is as unnecessary as it is indefensible. Every food law, federal, state, or municipal, controls fraud, and it is just as easy to stop the sale of oleomargarine for butter under that law as it is the sale of watered milk, or imitation vinegar, or adulterated spices.

The argument advanced by the dairy interests that their product needs protection is, of course, as silly as it is unfounded. Any product that is constantly advancing in price needs no protection from competition. The demand for butter from every consumer who can afford to pay the price for flavor, food value and universal adaptability in the kitchen, will take care of competition. Butter, well made from good raw material, needs no protection. Oleomargarine, an equally good food,* should have free access to the table of every one who wants it.

Milk Prices Up

The regulations imposed in the interest of milk supplies of unquestioned purity have increased production costs, in some ways very materially. Better barns, sanitary milk houses, sterile packages, refrigeration, tuberculin tested herds, all cost money but they increase milk values even more proportionally. No price is cheap enough for poor milk. Any price in reason is not too high for the food our children must have. And so the protest of the shortsighted dairyman that the sanitarians are forcing him out of business, is of little weight and quite as invalid as the wail of the consumer that regulations of the health department are increasing the price of food.

Some years ago Congress was prevailed upon to pass the mixed-flour law, ostensibly as a revenue measure, actually as a protection to the flour miller from the theoretical danger of the competition of corn flour. Mixed flours must now be prepared in licensed factories and sold, tax paid, under special labels. There is, of course, no objection to labelling mixed flour. They should be so labelled but no logical food official can find any reason for the tax. The Victory flours recommended for use by the U. S. Food Administration were subject to the tax and restricted sale because of the necessity of licensing the miller and blender. There was no way around the obstacle placed in the path of commerce by Congress, not even when the conservation of wheat was a vital war necessity.

Increasing Costs

In some ways the prohibition of the use of preservatives has tended to increase manufacturing costs. Chemicals secure keeping qualities more cheaply than proper sterilization and selected raw materials. And fortunately, for the consumer, most chemical anti-

septic agents are taboo in the nation's food supply. No sanitarian would countenance their use in order to cheapen costs when by their presence the wholesomeness of foods so preserved is materially reduced.

Says Saccharin Won't Do

During the sugar shortage, we have heard, especially from the bottling and ice cream trade, a demand that the use of saccharin be permitted as a sweetener. But when the voice uttering the demand was diligently sought, it appeared that the cry was that of the salesman for the saccharin manufacturers who were taking an opportunity to capitalize the stress of war for their own benefit. By no stretch of the imagination can we visualize a cheaper sugar supply as the result of letting down the bars to this the most notorious fraud recorded in the annals of food control.

The regulatory work of the U. S. Food Administration has been most successful. The control of the baker, miller, commission merchants, broker and large grocer has functioned through the development of a license system that denied the right to do business except to licensees, and provided for forfeitures of licenses in case of proven violations. This control, arbitrary and unprecedented, was feared at first. But it was very soon found to be a real stimulus to good business, and today, though regulations are being rescinded, the licensed industries are better business houses because they were compelled to adopt modern methods of accounting and stock recording, to sell products in uniform packages, to eliminate speculation and forego speculative profits.

Lessons Will Last

The control of food industries by the Food Administration will cease with the signing of the treaties of peace. But the lessons of the past year and a half will not be forgotten and it is very probable that many of the regulations will, when they do not violate the state or federal constitutions, be enacted into law.

If the food supply in the years to come is more abundant, more readily conveyed to market, cheaper because we have learned how to increase crops and reduce wastes, facilitate free movements by rail and motor truck, eliminate profiteering and gambling, the necessities of war may, in a very real way, become the blessings of the people.

EDITOR'S NOTE—At the conclusion of the reading of this paper several of those present took exception to the statements of the speaker in regard to the comparative food values of oleomargarine and butter. It was also urged by one of the speakers during the discussion that followed that if the same concession should be made to oleomargarine manufacturers in regard to coloring as is made to butter manufacturers that in the large centers of population the difficulties of enforcing the pure food laws would be greatly increased.



Illinois Nut Meat Industry Cleans House

Nut Picking in Homes Is Eliminated By the Efforts of Food Officials and Big Buyers of Nut Meats

THE nut meat industry of Illinois has been cleaned up.

What is more, the nut meat industry of Illinois has been centralized and stabilized and the purifying process through which it went as the result of the activities of the Illinois Food Department proved to be the deciding force for stability. Thus another example is furnished to disprove the old wail that government "interference" through investigations and pure food regulations would disrupt industry.

Less than a year ago a very large part of the nut meats that went directly to the homes in the form of salted nuts, confectionery with nut fillers or nuts on top, nut cakes and cookies, etc., were removed from the shells in the homes of foreigners and the hovels of the extremely poor.

Today the nut meats, practically all that are used or sold by the big grocery establishments, confectionery manufacturers and bakers, are taken from the shells in factories where the women and men who do the picking, as well as the machinery, work benches and equipment, are subject to sanitary inspection and regulation.

Reform Needed

It requires no great stretch of imagination—albeit it is no pleasant bit of imagery—to picture what the consumer of nut meats picked under the old regime swallowed along with the meats. Suffice it to say that samples obtained from the tenement districts and analyzed in the laboratories of the State Food Department indicated an urgent need of reform.

The reforms effected are principally due to a system of education and co-operation whereby results were obtained without recourse to the courts. About fifty hearings have been held in the Food Department offices to which violators of the food and sanitary laws, as relating to the nut meat industry were summoned; but no fines have been imposed.

Last February, after a conference with the owners of two or three of the leading nut factories which were already being conducted according to high standards, Commissioner W. Scott Matthews of the Illinois Food Department, decided to begin a movement for the betterment of the industry in its entirety, and to put a stop to the practice of farming out the work.

John B. Newman, assistant food commissioner, was given active charge of

this campaign. Notices of a conference to be held at the Food Department offices were sent to all branches of the trade, including dealers, manufacturers, importers, brokers and representatives of the big wholesale grocery houses.

Hostility on the part of some of the nut factory owners to the proposed measures developed at this meeting. These men complained that the additional expense of re-equipping their places and making alterations, would bankrupt

tions for the protection of the public. The practice of taking the nuts to the homes of the pickers must be stopped."

The owners of factories where proper conditions prevailed, were then called upon for opinions. By installing improvements and introducing proper sanitary methods, they declared they had put their business on a better basis and had been rewarded by increasing patronage as a result.

This was followed by a proposition



The Old Way—Free from Sanitary Cares

them. Labor, they argued, would be almost unobtainable, as the women and girls upon whom they depended could not be induced to leave their housework for the longer periods of time necessitated by the factory system. Mr. Newman was told that he would be depriving a worthy class of their means of livelihood.

"That's another matter," he said. "Our first and primary concern is for the establishment of proper sanitary condi-

from the buyers representing the biggest wholesale grocery houses in Chicago, that carried the day. In order that the higher standards might be applied equitably to the entire industry, they gave their assurance that they would buy goods only from factories where the cleanliness and correct sanitary methods were observed.

Following this conference inspectors were detailed to keep a close watch on the situation. For a time, nuts were

smuggled at night to some extent, into the tenement houses in the Italian districts. As soon as such cases were detected, the violators, including the dealer and pickers, were summoned to hearings held at the Food Department.

By degrees, the proprietors of factories who had objected at first to the proposed change in methods, adopted a favorable attitude. It was found that women and girls did better work away from their homes. They also benefited because the work was systematized and they were enabled to obtain steadier and more remunerative employment.

Chicago leads all other cities in the country in the salting of nut meats. The value of this product handled here annually amounts to about three million dollars. Spanish peanuts, jumbo peanuts, almonds, pecans and walnuts, are the most important varieties included in the salting and blanching operations.

This city is also a leading center in the nut picking industry. One factory on the north side occupies five floors of a well-equipped building and employs over 300 hands. Seventy-five girls are occupied in extracting pecan meats exclusively. An equal number are in the



Girls Enjoy Working in Sanitary Nut Meat Factory



A Battery of Automatic Nut Crackers

packing department, while salting and blanching is another important part of the business.

An Italian woman in the same district is the proprietor of another large place. She personally attends to all her buying and maintains active supervision over the factory. She has invented and perfected a nut-cracking machine which is fed automatically and breaks seven nuts at a time. In the basement is a plant which supplies ammonia for keeping the nuts in cold storage on one of the upper floors.

Nut picking in the factories is conducted under the piece-work system. Wages vary from 7 to 10 cents a pound. An expert worker can extract 25 to 30 pounds of meats a day. Some of the owners complain of difficulty in securing labor. This they ascribe to be due to a decrease in emigration from foreign countries on account of the European war. Others, apparently, experience no trouble in getting a sufficient working force.

SHORTAGE REPORTED OF BRAZILIAN PECAN NUTS

This year Chicago dealers report a decided shortage in the supply of pecans and Brazil nuts, which they attribute to a partial failure in these crops. Only 15 per cent of the normal crop of pecans and 40 per cent of the usual amount of Brazil nuts have been gathered this season, according to the brokers, and this, they say, is why prices on both these varieties have more than doubled. The supply of walnuts and almonds imported from abroad has not been affected to any appreciable extent by the war and the crop is considered a normal one.

Dealers and brokers report a greatly increased demand for all varieties of nuts and the prediction is made that the holiday trade this year will surpass in volume all previous seasons. The jumbo or large size peanut, temptingly blanched and salted, is rapidly increasing in popularity. To account for the increased volume in all branches of the trade, the dealers assert that the consuming public is becoming better educated and more appreciative of the value of nuts as a healthful and nutritious addition to the daily menu.

Manufacture of Invert Sugar and Use of Substitutes

By Prof. H. A. Ruehe,

Department of Dairy Husbandry, University of Illinois

A FEW months ago the subject of sugar substitution was one of vital importance to us because the sugar supply was the limiting factor in our business. Now that sugar is becoming more plentiful, the question may not seem quite so important. Nevertheless it is important for two reasons. In the first place we are not sure just what the future will bring and we must be prepared to meet any emergency. In the second place we should ever be eager to grasp any opportunity to cut down our materials cost.

It is true that sugar is a good food, and that it increases the food value of our ice cream. It does more than that; it adds a necessary palatability to our product. In times when sugar is scarce should the production of ice cream be curtailed providing a healthful substitution can be made which will give the desired palatability to the ice cream? I contend that it should not. Ice cream has practically become a necessity. It is a method of supplying the greatest of foods—milk—to the human diet in the form of a cooling and appetizing confection, and its manufacture should not be limited because of a shortage of one of its ingredients.

The food value which is added to the ice cream by the sugar can be totally substituted by the use of glucose or other sweeteners in the ice cream; or by the use of starchy foods in the general diet.

Table Showing Calorific Value of Sugars and Starch*

	Calories per gram	Relation of calorific value of sugars compared with sucrose
Sucrose (cane or beet sugar).....	3955	.....
Glucose	3742	94.6%
Maltose	3949	99.8%
Starch	4182	105.8%

*Taken from Brown's Handbook of Sugar Analysis.

According to this table, one can readily see that the food value furnished by the sugar could easily be furnished by other commodities.

However, when we take up the part that sugar plays in the palatability of ice cream, we come to something more difficult to substitute. People have accustomed themselves to cane sugar sweetening and hence desire that flavor, altho, no doubt, in time they could become accustomed to corn sugar sweetening.

If the sweetening power of sugar could be stretched, then just to that

amount would we be able to conserve sugar. It was from this standpoint that I began my investigations in making invert sugar. Inverting sugar is a process not foreign to the physiological processes of the human body. Cane sugar taken into the body with food is acted upon by the invertase in the digestive juice of the intestines and changed from sucrose to dextrose and levulose in equal proportions. A molecule of water is added to the molecule of sucrose and the resulting compound splits and forms a molecule of each levulose and dextrose. The dextrose so formed is the same chemically as that which we find in commercial glucose and is not quite as sweet as sucrose, whereas the levulose is somewhat sweeter than sucrose or cane sugar, and the resultant mixture of these two appears sweeter than a sugar solution of the same strength. Hence, by the process of inverting, the sweetening ability of the sugar is increased.

Acid Only an Agent

Sugar inverts readily into dextrose and levulose by boiling with water in the presence of an acid. The acid does not enter into the chemical combination, but merely acts as an agent in helping the reaction to take place. The stronger the acid solution, the more rapidly the inverting process takes place. One should, then, use such an amount of acid as would complete the process in a short time, yet not so strong as to make the flavor of the acid in the finished product objectionable. Tartaric acid is a very satisfactory acid to use. Altho it is harmful if taken in large amounts, the amount of acid that would be present in a gallon of ice cream sweetened with invert sugar, made according to the formula which I will give, would be only a fraction of the amount of tartaric acid that would be found in a glass of grape juice.

Hersfeld manufactured invert sugar by the following formula: 1000 grams cane sugar, 300 grams water, 1.1 grams tartaric acid. Boil 30 minutes. The finished product gave the following composition upon analysis: Water, 16.32%—there being some loss due to evaporation; Invert sugar, 73.38%; Sucrose (cane sugar, 4.36%; Dextrin, 4.86%.

The composition of white clover honey as given by Leach is as follows: Water, 14.54 to 20.54%; Invert sugar, 70.32 to 78.15%; Sucrose, 0 to 7.09%; Ash, 0.04 to 0.2%; Dextrin, .07 to 2.46%.

According to these analyses then,

invert sugar made up in this way compares very closely to the average composition of white clover honey. Of course, the honey would contain some flavors that would not be found in the invert sugar, but the sweetness of the two products would be practically the same, and they would taste very much alike.

Formula Change Unnecessary

In making invert sugar, the ice cream manufacturer might best make up a solution of such a strength as would replace sugar pound for pound so that his ice cream formula need not be changed when using it.

The following formula has given satisfaction both in ice cream and in syrups: 100 pounds of sugar, 45 pounds of water, 50 grams tartaric acid. Boil gently from 30 to 35 minutes.

This should make about 140 pounds of invert sugar, as there will be some loss in evaporation, the amount varying with the manner in which the solution is boiled. If much water is lost, it can be added to make up that amount. This solution contains 71.4% of sugar and 28.6% of water. In other words, every time you used 100 pounds of this invert sugar you would actually be using only 71.4 pounds of cane sugar. This formula has been tried out by several ice cream manufacturers. Usually they have not paid any attention to the amount of water lost by evaporation, but merely used the product as it was finished and they have claimed an actual saving of from 20% to 25% on sugar. A greater saving would have been made if the loss due to evaporation had been less.

Commercial invert sugar containing about 20% of moisture, can be purchased on the open market. But why buy water and pay freight charges on it? Why not make the economic gain by manufacturing the invert sugar yourself?

A further saving of sugar can be accomplished by substituting either corn sugar or glucose for part of the invert sugar. Ordinarily neither of these substitutes can be used to totally replace the sugar, because usually these products impart undesirable flavors when used in such amount. However, they can be used to replace from 20 to 50%, depending upon the quality of these corn products. Neither glucose nor corn sugar is as sweet as cane sugar, so it is not possible to use either of them to replace cane sugar pound for pound. Glucose is about 60 per cent and corn

sugar about 80 per cent as sweet as cane sugar.

A few years ago a committee was appointed by the National Academy of Science to investigate these products, and their report stated them to be healthful. Therefore, there should be no objection to their use in ice cream.

Leach gives the following as the composition of glucose and commercial dextrose or grape sugar:

Glucose — Dextrin, 29.8 to 45.3%; Maltose, 4.6 to 19.3%; Dextrose, 34.3 to 36.5%; Ash, .32 to .52%; Water, 14.2 to 17.2%.

Commercial Dextrose:—Dextrin, 0 to 9.1%; Maltose, 0 to 1.8%; Dextrose, 72 to 99.4%; Ash, 0.3 to .75%; Water, .6 to 17.5%.

A few years ago there were objections to the use of glucose and corn sugar because of the fact that acids used in the process of manufacture were carried over in the finished product. However, these objections have been removed by more recent processes; and it is not at all unlikely that the processes will be still further perfected.

Summary of Experiments

I will give you a brief summary of some of the experiments which I carried on to compare invert sugar with cane sugar, and with invert sugar partially substituted with glucose and with corn sugar.

Ice cream of several different flavors was used in the experiments, but all specific comparisons were made with cream of the same flavor. Before freezing, the different mixes were tested for viscosity with the Mojonnier Viscosimeter designed for testing the viscosity of evaporated milk. The percentage swell of each batch was determined with the Mojonnier Over-Run Outfit. The sweetness of the different batches was compared after the ice cream had been hardened for two days.

When comparing the mixes containing seven pounds of invert sugar per ten-gallon with seven pounds of cane sugar per ten-gallon, in the vanilla ice cream both the viscosity and the over-run obtained were the same. In the pineapple mix, the one sweetened with invert sugar was slightly more viscous than the one sweetened with cane sugar, and a slightly better swell was obtained with the sugar. In the strawberry ice cream the sugar mix was slightly more viscous than the invert sugar, altho a slightly better swell was obtained with the invert sugar. However, these slight differences in swell were probably due to the handling of the freezer, and were so slight that they should not be regarded as important. The sweetness of all batches was practically the same.

The next experiment was for the purpose of comparing mixes sweetened with 6½ pounds of cane sugar with others containing 3½ pounds invert sugar combined with 3½ pounds of corn sugar. Corn sugar being less sweet than the invert sugar, 3½ pounds were used to replace 3 pounds of invert sugar. By such a combination, only 2½ pounds of cane sugar were really used to a ten-

gallon mix. Five different kinds of ice cream were used in this experiment, and in each case the mix sweetened with cane sugar was slightly more viscous than the mix sweetened with the combination of invert and corn sugar; and in general a slightly better swell was obtained in the ice cream sweetened with the invert and corn sugar.

Two of the batches sweetened with cane sugar were criticised as being very slightly coarse in body; whereas none of the batches sweetened with the invert and corn sugar combination were criticised in this respect. All batches compared favorably, in sweetness, excepting in the case of the strawberry ice cream which was criticised in both instances as lacking a trifle in sugar; but the criticism was because of the *amount* of sugar rather than the *kind*, since the mix sweetened with invert and corn sugar compared favorably with that sweetened with cane sugar. The flavor of the corn sugar was very slightly noticeable in the strawberry ice cream.

In the third experiment, a comparison was made between batches sweetened with 6½ pounds of invert sugar and batches sweetened with 4 pounds of invert sugar in combination with five pounds of glucose. The five pounds of glucose were substituted for 2½ pounds of invert sugar. The viscosity of the various batches was about the same. A better swell was obtained in the batches sweetened with the 6½ pounds of invert sugar. All the batches sweetened with the glucose and invert sugar were criticised as lacking in sweetness, but none of the batches sweetened with invert sugar were criticised in this respect. The batches containing glucose were also criticised as being grainy and coarse. Another criticism of glucose is the difficulty in handling it, it being hard to dissolve.

Invert Sugar Sweetener

At one of the sectional meetings last year one member of this Association suggested that possibly the reason invert sugar was sweeter was because it was in total solution, and that if the sugar was heated in a solution so as to be thoroly dissolved, it would be just as sweet as the invert sugar.

I made up two solutions of exactly the same proportions of 100 pounds of sugar and 44 pounds of water. Both of these were boiled for 30 minutes. To one solution 50 grams of tartaric acid was added so that inversion would take place, whereas no acid was added to the other. The inverted sugar syrup tasted much sweeter than the sugar syrup, and when used in ice cream it took practically 9½ pounds of sugar syrup to a ten-gallon mix in order to make it taste as sweet as a similar batch sweetened with 7 pounds of invert sugar, showing that practically nothing was gained by using the simple sugar syrup but that a saving of sugar was accomplished by inverting it. The sugar syrup had to be added to the mix when it was warm as large crystals formed in it when it was cooled which made it difficult to

handle. There are no crystals in invert sugar syrup.

The experiments which I have made in this connection show, therefore, that the process of inverting sugar for ice cream manufacture results in the saving of considerable sugar. Also that corn sugar, when used in proper proportions with invert sugar, makes a satisfactory substitution which results in a still greater conserving of sugar.

Even tho we may be past the need to conserve sugar created by the war emergency, the saving as a result of the use of a little over 70% of our original sugar requirement by the simple process of inverting it should surely interest us from the financial standpoint.

Address delivered before the Illinois Association of Ice Cream Manufacturers, Chicago, December 5th, 1918.

Food Experts Attend Convention

The meetings of the Food and Drug Section of the American Public Health Association, held during the 46th annual convention of this organization, brought out many interesting discussions concerning food matters, especially in regard to the problems of satisfying the world demands on American products.

These questions were discussed not from the manufacturers' standpoint, but more particularly from the standpoint of the conservationist.

Dr. Charles E. North, director of the North Public Health Bureau, New York, in his discussion of the topic, "Milk and the War," displayed a series of carefully worked out charts, which showed, among other things, that while meats, eggs, etc., had gone up in price 100 per cent to 200 per cent or more during the period of the war, milk prices had gone up only about 88 per cent. This increase, he thought, was a necessary one, and while some economies in milk gathering in the country districts and milk distribution in the cities could be effected, that this would not materially reduce the price of milk.

Miss Marion Talbot, Professor of Household Administration, University of Chicago, gave a very complete discussion of the subject, "Retail Distribution and Marketing of Foods." Dr. Peter H. Bryce, chief medical officer, Canada Immigration Service, Ottawa, Canada, read a paper on the subject, "A Year's Changes in Food Habits."

Harry E. Barnard, Ph. D., who, with one exception, is the only food control official to serve also as a member of the Food Administration, read a paper on the subject, "The Effect of Food Control on Food Prices," which is published in this number of THE AMERICAN FOOD JOURNAL.

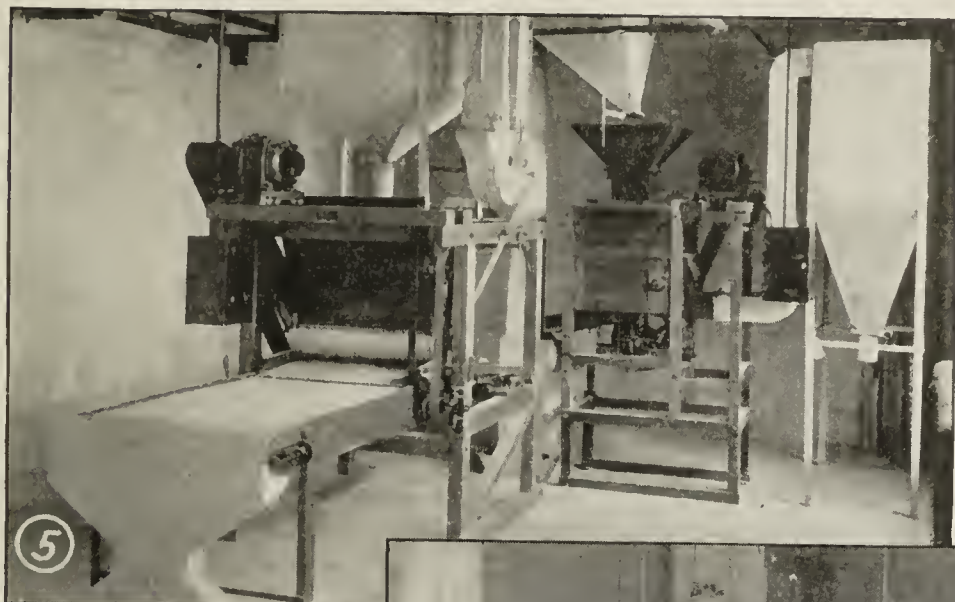
Owing to the fact that this convention was held so near our printing time we are unable to give it the full report that it deserves. We will be able, however, by the courtesy of the American Public Health Association, to print in the January number a fuller report and several of the papers that were read.

How to Make Peanut Butter

Although a Strictly American Product Now, Some Day the Whole World Will Be Eating It If This Industry Keeps Growing

By A. P. Grohens

No. 5 shows blanching, stoning and picking machinery.



TWENTY-FIVE years ago peanut butter as a food was entirely unknown, and its manufacture as a commercial product was, of course, unthought of. Today it appears daily on the tables in tens of thousands of homes and is appreciated not only for its rich and appetizing flavor, but for its nutritive value. There are several factories which produce it in quantities of from five thousand pounds to twenty-five thousand pounds per day and innumerable small plants being operated as a side issue in coffee roasting establishments, confectionery factories and kindred lines.

An American Product

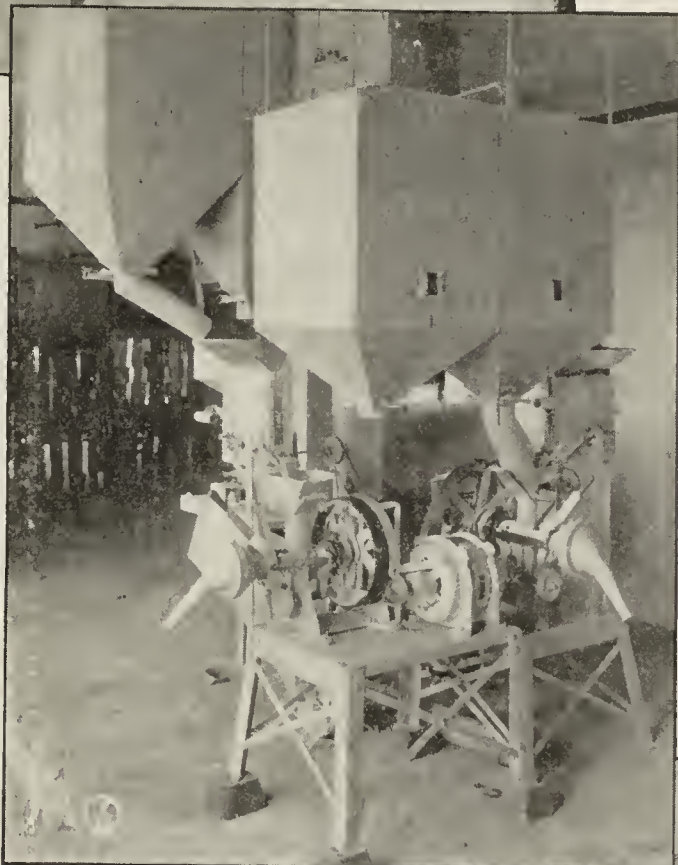
But peanut butter making is still in its infancy and the great majority of the civilized people of the world are still ignorant of the food value of this new product, say the men who have taken the most active part in the development of it. It is an American product in the sense that its manufacture originated in this country and it still is an American food, as very little is exported to or manufactured in foreign countries.

The food value of the peanut is high, containing as it does, 25.8 per cent of protein, 38.6 per cent or fat, 24.4 per cent of carbohydrates and 2 per cent of ash, making a total of 90.8 per cent nutritive value. Peanut butter not only retains this entire amount of nutrition, but is rendered by means of the crushing or emulsi-

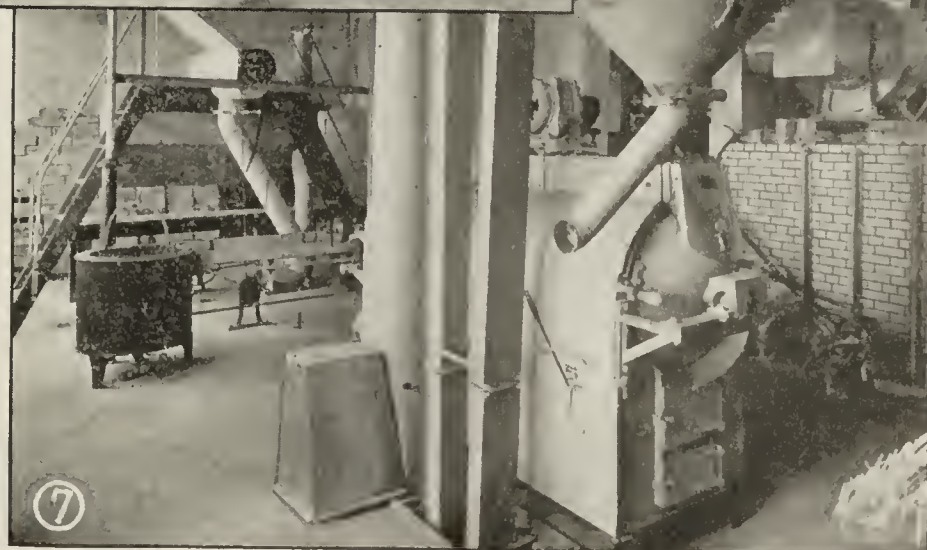
fying process much more easy of digestion and much more palatable, as well as making it suitable to be used in a variety of ways as a regular article of diet.

About twenty-three years ago the manufacture of peanut butter began on a small scale in Philadelphia, and a little later was taken up by a health reform institution in Battle Creek, Mich. Not much progress was made, however, in the peanut butter industry until the founder of the Lambert Machine Company originated the idea of placing on the market a small hand peanut butter mill. The mail order plan was first adopted and every order for one of these little mills included an order for a bag—about 100 lbs.—of shelled peanuts. Small hand roasters and blanchers were next added. The purchaser was given a recipe for making the butter.

This plan proved a success as an introductory of peanut butter making and created a demand for peanut butter as a food that soon necessitated the creation of larger peanut butter making machines. Peanut mills with a daily capacity of two thousand pounds soon appeared on the market with the complimentary equipment consisting of roast-



No. 6. Electrically operated butter mills with automatic salters.



No. 7. Part of Peanut Roasting Plant.

ers, blanchers and picking apparatus. Peanut butter factories began to be established in different parts of the country.

Unlike many other manufacturing equipments the outfit to make peanut butter does not entail a big outlay as a plant capable of turning out about two thousand pounds a day can be installed at from \$2,000 up, depending on its completeness. A complete equipment consists of nut mills, blanchers, roasting equipment, picking machines, aspirators, hoppers, storage bins, elevators, power generator and transmission.

The quality of peanut butter is what you make it. The purest and best tasting butter is made only from No. 1 nuts prepared in a scientific manner so that all impurities are removed. The nuts should be subjected to a cooking or roasting process that will not produce free fat before they are passed through the blanchers and cleaners and finally into the grinder or nut mill. It, therefore, follows that the selection of peanuts and their preparation before they are ground up are the important elements in adding to or detracting from the flavor, because the grinding of the nuts is merely perfunctory and cannot add in any shape or manner to the flavor.

Good Nuts Necessary

No. 1 Spanish peanuts are the richest in fat, and consequently will make the richest butter. These nuts contain about thirty-eight percent of fat. The No. 1 Virginia nuts contain about 32 per cent of fat. My experience has taught me that a blending of the two varieties of nuts will make a superior butter.

The No. 2 Spanish peanuts are used extensively, because they are lower in price. Owing to the fact that these nuts contain a greater percentage of stones than any other variety of shelled nuts, it follows that either the shrinkage will be greater proportionately, or if the stones are not eliminated the quality of butter is naturally inferior. It is also very difficult to roast the No. 2 Spanish, because the greater part come in a "skinned" or "split" state. This exposes the nut meats to the heated metal in the process of roasting and produces what is known as "free fat" and "spotting." This also imparts a peculiar flavor not relished by those of a fastidious taste.

The No. 2 Virginia peanuts are all small and shriveled up, being undeveloped and are, therefore, exceedingly hard to clean. Butter made from these peanuts is necessarily dry, full of dark spots, and somewhat bitter in flavor.

Roast Carefully

My advice to all those who are seeking the manufacture strictly first-class peanut butter is to use only No. 1 peanuts, preferably a blend of Virginia and Spanish, and to see that all impurities are removed. The roasting apparatus should be of such construction as to keep the nuts from "spotting" and to virtually boil them in their own steam and not dry them up, as is the case where peanuts are roasted in an ordinary coffee cylinder.

Plenty of time should be allotted the

peanuts for the roasting, as they require a lower degree of heat than is ordinarily applied to coffee. After the nuts are properly roasted and thoroughly cooled off, they are ready to pass through the blancher, which removes the skins as well as the bitter sprouts or germs. Once the peanuts are blanched they should not be exposed long to the atmosphere. It is best to grind them into butter the same day in order to retain the freshness and full flavor of the nut. A little pulverized salt may be added. A mill equipped with an automatic salter is to be preferred.

When They Disobey

Failure to observe regulations governing the sale of flour and wheat flour substitutes has caused the Huntington Roller Mills of Huntington, Utah, to lose its Food Administration license. The revocation becomes effective November 15 and remains in force for an unlimited period.

For evasions of the sugar regulations, the Food Administration has notified all licensees that they are to refuse all orders from D. Apostolas & Brother, manufacturers of ice cream, syrups and candy at Lowell, Massachusetts. The "unfair order" is effective until further notice.

An investigation before the Federal Food Administration for Massachusetts shows that the company has filed applications for certificates for 7,200 pounds for each of two factories, but was unable to produce originals or duplicates of any bills received, and seemed to make little effort to do so.

Unfair business practices, chief of which was the practice of reporting false returns to shippers, have led three New York City poultry houses into grave difficulties. Lass & Cohen have lost their license for an unlimited period; W. J. Heinrichs must suspend business for twenty days, and N. Durham & Sons must suspend business for one week.

An investigation of Lass & Cohen showed that they were making a practice of reporting to their shippers prices in excess of actual market prices in order to take trade away from competitors. A large proportion of their commission sales showed that the selling prices which they reported to their shippers, and the proceeds which they transmitted, failed to correspond to the actual sale prices and to the actual proceeds. It was also shown that Lass & Cohen habitually made false claims against the railroads, endeavoring to recover much more than lost or damaged goods were worth.

In their defense Lass & Cohen claimed that they were merely following usual trade practices and that an investigation of other commission merchants would show that their firm was no exception. As a result of this, the New York Federal Food Board under-

The grinder, or peanut butter mill, should be of such design and construction as to thoroughly emulsify the oil of the nut in the process of grinding. The product should pass through the mill only once in order to produce a semi-liquid state. Its packing into various styles and sizes of receptacles should be done direct from the mill.

Peanut butter thus made will keep for many months in an excellent condition even if not kept in absolutely air-tight it is not exposed to heat, but kept in a reasonably cool place.

took a searching inquiry of poultry commission merchants, finding that with only two other exceptions all firms were giving the Food Administration their complete support. This investigation disclosed the fact that Heinrich and Durham were employing business methods similar to those of Lass & Cohen.

An attempt to secure certificates by false statements has led Morris Rotman, retail grocer at New Bedford, Mass., into difficulties with the Food Administration. All licensees have been forbidden to sell sugar to Rotman until further notice.

An investigation of Rotman's business methods showed that he swore before a justice of the peace that he had obtained no certificates for October of this year. The Food Administration found this statement untrue, showing that certificates had been issued to Rotman and that he had used them in purchasing sugar on October 7 and October 20.

The Hillsdale Flour & Feed Mill at Stockton, Minnesota, has lost its license as a manufacturer of wheat flour, rye flour, barley flour, oats, corn, corn meal, and corn flour, because it failed to extract the required amount of flour when grinding wheat, and exchanged flour for wheat without requiring the purchasers to buy substitutes or file statements showing that they had already acquired the requisite amount of substitutes.

Violations of the sugar regulations have caused two Chicago grocers to lose their Food Administration licenses for limited periods. For selling in excessive quantities and for profiteering, the Novak Grocery Company will be closed for fifteen days from December 7, and for selling sugar without requiring delivery of certificates, the Star Wholesale Grocery Company will be closed from December 7 to December 17.

U. S. Hassell, a retail grocer at Janesville, N. C., will be deprived of all supplies for 90 days from November 25 for profiteering in sugar, flour and other commodities. Hassell is not licensed, so all licensees have been notified that they are to fill no orders for him during that period.

The Procter & Gamble Co. Wins Suit

Court of Appeals Reverses Decision of Lower Courts On Patent Infringements

The Procter & Gamble Co. wins a great victory in the decision of the United States Court of Appeals in reversing the lower court's decision in their case against Berlin Mills Co. for infringement of the patent under which the trade-marked product "Crisco" is made. The following is the decision as rendered by the court of appeals:

The action is upon Claims 1 and 2 of Patent No. 1,135,351, issued April 13, 1915, to the plaintiff herein as assignee of John J. Burchenal, who is and long has been an officer of the corporate plaintiff. The claims are as follows:

"1. A homogeneous lard-like food product consisting of an incompletely hydrogenized vegetable oil.

2. A homogeneous lard-like food product consisting of incompletely hydrogenized cottonseed oil."

The Court below held in substance:

1. The disclosure did not amount to invention;

2. If there was invention Burchenal was not the inventor; and

3. Upon a proper construction of the claims in suit there was no infringement.

The bill was accordingly dismissed and the plaintiff took this appeal.

The patent declares that "this invention is a food product consisting of a vegetable oil, preferably cottonseed oil, partially hydrogenized and hardened to a homogeneous white or yellowish semi-solid, closely simulating lard."

This is a description of a visible, tangible thing which for some years has been manufactured and sold by the plaintiff; as to which there is no evidence that anybody else ever made it before, or that if this product is entitled to patent protection there is any closely related prior art.

Invention is denied, first, on the ground once taken by an examiner in the office, namely, that "if the problem of simulating lard from cottonseed oil were presented to an oil chemist, an incomplete hydrogenization of the cottonseed oil would at once suggest itself to him as a solution of the problem." That is, (a) the matter is said to be so obvious as not to rise to the dignity of invention.

Another objection is, that hydrogenation of vegetable oils was not new; and the discovery long prior to this application of catalysts not belonging to the "royal" group of metals had paved the way to effective and comparatively inexpensive hydrogenation. Prior to Burchenal's effective date it is admitted that the hydrogenic saturation of oil by catalytic means had been practiced at least in well-known laboratories, and a hard fat produced, solid at ordinary temperatures and showing on analysis a very large percentage of stearic or palmitic acid. It is obvious that if one starts with cottonseed oil, which is liquid at ordinary temperatures, because it has too little solid fat in it, and by chemical means so changes the molecular composition or arrangement of the substance as to increase the ratio of solid fat, i. e., unites enough hydrogen with linolin and olein to produce stearin, and thus produces the hard fat, commonly known

as stearin; there must have been a time during the development of the process when the union of hydrogen had only progressed far enough to convert the liquid into a semi-solid.

Therefore, it is said (b) that no man is entitled to a patent upon the thing or product which has always been produced when the process of making another thing or product was (say) half done.

The third objection to invention is substantially this: the merit or value of what Burchenal claims and what this plaintiff makes and sells, is that it looks like lard, acts like lard and can be used for the purposes of lard. But before Burchenal many imitation lards were made by mechanically mixing hard animal fats and cottonseed oil in varying proportions, and some of these mixtures show on analysis substantially the same chemical characteristics as are shown by Burchenal's chemically produced "homogeneous semi-solid." This is as much as to say that the Burchenal article when completed and ready for use must be old, because other men had earlier arrived at the same chemical result by other paths.

Objection (a) raises the question of fact encountered in a large proportion of patent causes, and concerning which discussion is of small value if the record discloses no one who ever tried to do the same thing in the same way. When novelty in that sense appears the question really is one of measuring foresight by hindsight. The problem seems easy now, but when the object reached was desirable, useful and apt for commercial success, the bald fact that nobody ever did it before is persuasive, though not conclusive evidence of some invention. Burchenal's imitation lard has these attributes, and we consider it a sufficient answer to the statement that any oil chemist could have done the thing, to note that no oil chemist did do it during the more than score of years prior to Burchenal's application when cottonseed oil (especially) as an abundant American product was endeavoring to supplant lard in the American market.

The next objection to invention (b) really denies the possibility of invention ever residing in noting or discovering a use for something which, if not a by-product, may be termed a half-product or unfinished product of an existing method of procedure. Without resorting to the extreme doctrine of Potts vs. Creager, 155 U. S., 597, it seems to us that the question presented by this record depends upon whether the thing produced by partial hydrogenation is a different thing from that which existed before hydrogenation begun and that which would exist when it ended. The change introduced by catalytic introduction of hydrogen is chemical; the analysis of the cottonseed oil at diverse stages of the process or manufacture differs. To be sure, the difference is only in the union of additional atoms of hydrogen with the unsaturated fats (linolin and olein); but if this molecular and chemical change induces a resulting change in appearance, in utility and in texture, it may well be called, when lard-like, a thing different from what it was as oil, and equally different from what it would be at the point of saturation.

The patent law does not speak in terms of science, though scientific evidence is necessary for the application of its rules. The chemical composition of steam, water and ice is the same, but they are different things, and in the some common-sense way, oil, lard and stearin are

different things, although (with some chemical latitude) the oil may be said ultimately to become stearin, and to pass through the lard stage on the way.

For substantially the same reasons we think there is nothing in the last (c) objection to invention. It may be assumed as true that by the mixture of cottonseed oil and animal stearin a substance can be produced which for practical purposes is the same thing as Burchenal's chemically changed cottonseed oil; but one is a mixture and the other is not, and assuming the difference to be unimportant from the standpoint of either chemist or cook, it is a vital difference from that of the law.

We are, therefore, of opinion that there was invention in Burchenal's disclosure.

The finding below, that Burchenal was not the inventor of whatever invention is revealed, is really a declaration that one Kayser did the inventing and Burchenal for some inexplicable reason appropriated it. This is an affirmative defense and must be sustained by a fair preponderance of credible evidence. Burchenal swore to invention in the statutory form, and the resumption of validity extends to the identity of the inventor, for certainly nothing could be more completely invalid than a patent for invention to one who invented nothing. * * *

There is no evidence that, during the whole period of Kayser's employment by the plaintiff and his experimentation upon fats, he either attempted to produce a "lard-like compound" or observed that such compound was obtainable by his process. There is some evidence (if it can be called by that name) that after Kayser had carried on experiments at plaintiff's factory for some time he showed to the deposing witness a fat "like tallow," looking as if it had been "moulded in a jelly glass," and that Kayser said in substance that "it was for cooking purposes." What Kayser showed may be regarded as evidence, but upon what principle the remarks of one who is neither a party nor a witness can be regarded as competent, we do not perceive.

We are satisfied of the truth (entirely apart from all presumptions) of defendants' attorney that it was not until Kayser had returned to England, or was on the point of going, that it occurred to anyone that it was not necessary to first harden by hydrogenic saturation the cottonseed oil and then mix it with the fluid article in order to make a lard-like compound—but that the hardening process might be arrested in the manner and for the purposes disclosed by Burchenal's application.

Assuming now that this mental operation or discovery in the sense of the patent law (Walker on Patents, 5th ed., Sec. 2) amounted to invention, we not only find no evidence that Burchenal was not the inventor, but it is a strain upon credulity to believe that when this plaintiff corporation might just as well have advanced an application in Kayser's name it deliberately preferred the fraud of prosecuting it in that of Burchenal.

It may be, and we think it, quite true that the evidence reveals Burchenal as not primarily a chemist, but a man of business deeply interested in the advancement of his corporation's prosperity. We recognize the fact that there is a fundamental difference between "new articles of manufacture and new articles of commerce," and it may also be quite true that Burchenal's contribution to the sum of human knowledge grew out of

the trained business man's observation of the possibilities of a chemist's process, which he was himself quite incapable of devising. * * *

Quite possibly this patentee would never have conceived the thought had he not watched Kayser, but he could and did get something out of Kayser's train of phenomena, which the latter neither thought of, nor reduced to practice.

The final objection to a decree in plaintiff's favor is that, properly construed, the claims in suit are not infringed because (a) the defendant's product widely varies from that of the patent in the relative percentages of saturated fats, olein and linolin, (b) the process pursued by defendant in making its product differs radically from that said to be disclosed or assumed in the patent in suit, and (c) that said claims are to be regarded as strictly limited, if not substantially abandoned, through or by reason of the proceedings in the patent office as revealed by the file wrapper contents.

As to the first point (a) it is enough to note that while the variation insisted upon is true, it must to negative infringement be at least a variation extending beyond the limits of a valid claim read in the light of the disclosure.

In this instance it is not denied that what the defendant makes and sells is not only lard-like, homogeneous in the sense of mixtureless, and wholly consisting of an incompletely hydrogenized cottonseed oil, but it is within the limits of iodine-value, titer and melting points specified in the application. Therefore, it is an infringement.

It is true (b) that defendant's process of manufacture is very different from that of plaintiff, and we are willing to assume it different from and better than anything known to Burchenal or developed by Kayser. But this patent is upon a product, and if the product complained of is the patented article substantially as described, it makes no difference by what path or process, new or old, inferior or improved, the infringing product is manufactured.

The contention (c) that the office proceedings were such as to limit or nullify the broad claims in suit amounts, we think, to this, namely: when this application was filed in 1910 application demanded two claims, which, if anything, are slightly narrower than the two now in suit. They were rejected by the primary examiner and thereafter many changes were made in the language of the claims submitted by way of amendment. In our opinion, never at any time did the applicant acquiesce in the examiner's action, but consistently endeavored to obtain, and finally did obtain in the claims first above quoted, what he had in the first place asked for.

It is the acquiescence of an applicant and not the action of an examiner or of many examiners that surrenders to the public what the applicant first declares to be patentable invention. The very word "acquiescence" necessarily implies obedient action, perhaps enforced, but still submission on the petitioner's part. Here there never was any such acquiescence, and the patent as issued substantially contains in the claims in suit the originally propounded definition of invention. This is far within the rule enforced by us in *Kinnear, etc. Co. vs. Wilson*, 142 Fed. Rep., 970, where a rejected claim was carried into and obtained in another patent. Here the claims rejected were at last substantially victorious in the same patent—apparently through a change in the examining personnel.

For the reasons stated the decree appealed from is reversed with costs both here and below, and the cause remanded with directions to enter a decree adjudging claims 1 and 2 valid and infringed.

Judge Ward entered a dissenting opinion.

United States Circuit Court of Appeals for the Second Circuit.—Proctor & Gamble Company, Complainant-Appellant, against Berlin Mills Company, Defendant-Appellee.

Before, Ward, Rogers and Hough, Circuit Judges, Ward, Circuit Judge (Dissenting):

I think the district judge was right in holding the patent void for lack of invention. It was well known that a vegetable oil could be changed chemically into a hard fat by hydrogenization, and, of course, that at some stage of the process before complete hydrogenization it would be a homogeneous semi-solid. It was also known that the process would not affect the edibility of the product. The product at all stages of the process was, therefore, old and open to the public for any use of which it was capable. To apply it when semi-solid as a substitute for animal lard in cooking was no doubt novel and useful, but was not in my opinion invention. To one skilled in the chemical art such a use was as obvious, if he thought about it at all, as were the many mechanical improvements which, though new and useful, have been held not to be invention because within the capacity of those skilled in the particular art. There was nothing revolutionary about this new use. There was no crying need nor any problem to be met. The market was and still is abundantly supplied with mixtures of vegetable oils and animal fats which satisfactorily meet culinary needs. Yet the complainant is given a monopoly of all semi-solid homogeneous hydrogenized vegetable oils, however produced, when applied to culinary purposes.

Colgate Decision

MANUFACTURERS who insist upon controlling the resale price of trade marked articles by refusing to sell to retailers who cut prices were supported in their position by the decision of Judge Waddill of the United States District Court for the Eastern District of Virginia, on October 29th, in which the indictment of Colgate & Company under the Sherman Act was quashed.

The case was *The United States of America vs. Colgate & Company*, a corporation and resulted from the return of an indictment on December 18, 1917, charging that Colgate & Company, during the period of three years immediately preceding this date did knowingly and unlawfully create and engage in a combination with the aforesaid wholesale and retail dealers within said eastern district of Virginia, and throughout the United States, to procure adherence on the part of said wholesale and retail dealers in the products of the defendant, in selling such products sold to them as aforesaid, to resale prices fixed by the defendant, and to prevent such dealers from reselling at lower prices, such products sold to them as aforesaid, thus to suppress competition amongst such wholesale dealers, and among such retail dealers, and that prices were thereby maintained and enhanced to the consuming public, in violation of the act of Congress entitled "An Act to protect trade and commerce against unlawful restraints and monopolies," approved July 2nd, 1890, commonly known as the Sherman Anti-Trust Act (26 Stat. L. 209).

To this indictment the defendant entered a demurrer which raised two

questions for the consideration of the court, namely:

(1) Whether the indictment charges a criminal offense under the act referred to; and

(2) If so, are the averments of the indictment made with the accuracy, definiteness and sufficiency that the law requires in setting forth a criminal charge, in order that the defendant may be advised of just what the offense is he is charged with.

The following are a few excerpts from the discussion of Judge Waddill leading up to the decision in which he sustained the demurrer of the defendant and quashed the indictment:

"In the view taken by the court, the indictment here fairly presents the question whether a manufacturer of products shipped in interstate trade is subject to criminal prosecution under the Sherman Act for entering into a combination in restraint of such trade and commerce, because he agrees with his wholesale and retail customers, upon prices claimed by them to be fair and reasonable, at which the same may be resold, and declines to sell his products to those who will not thus stipulate as to prices. This, at the threshold, presents for the determination of the court, how far one may control and dispose of his own property, that is to say, whether there is any limitation thereon, if he proceeds in respect thereto in a lawful and bona fide manner.

* * *

"It cannot be said that the defendant has no interest in the prices at which its goods shall be sold. On the contrary, it had a vital interest, in so far as cutting the same would tend to demoralize the trade and might have been more injuriously affected by the result of this disorganization, than the public would be benefited by a temporary reduction in the prices of its products."

* * *

"In the instant case, the court's conclusion is that the averments of the indictment, when carefully considered, and read in the light of the defendant's inalienable right to deal lawfully with its own property, the handling, trading in and disposing of which is made the subject of this indictment, fail to charge any offence, either in restraint of trade and commerce, under the Sherman Act, or any other law of the United States.

"This language is too general, and the defendant has the right at least to be informed of some one particular infraction of the law that it is claimed it has committed. It would be impossible to intelligently prepare a defence or answer to this indictment, as it involves the defendant's dealings with its wholesale and retail customers, throughout the territory named, covering a period of three years. This is too indefinite, and there ought to be no difficulty, if such conditions exist, as set forth in the indictment, to name some specific instance of the alleged combination, and state the same in detail."

Doubly Protected

Back of Armour's Meat Products, attesting their absolute goodness, purity and quality, is the reputation of a long established house. Rigid U. S. inspection, supplemented by our own unsparing scrutiny, constitute a double protection.

Uniform dependability of every member of the Oval Label Line has caused them to become the standard of comparison. Where the Oval Label is your guide you are assured the pinnacle of quality and flavor.

ARMOUR AND COMPANY
CHICAGO



2791

Beware the Garlic

By Dr. Leonard Keene Hirshberg, M. A., M. D.

GARLIC by any other name would smell as bad. One of the saddest things in New York is to stand either at the corner of 47th Street and Broadway or at almost any other corner of Gotham on Friday night, Saturday or Sunday or any other holiday, and nearly suffocate from the passing odors and smells of breathed out vapors.

No true American, Englishman, or doctor ought to eat garlic or onions. These "poor birds of the deep sub-soil," shed forth a volatile oil known to poison-gas chemists as allyl sulphid.

Garlic is the bulb of *allium sativum*, of the Liliaceae family, native of the East and cultivated from the earliest ages. The stem rises to the height of about two feet, unbranched and bears at the top, an umbel of whitish flowers, mixed with many small bulbs. The leaves are grass-like, obscurely keeled and not fistulous like those of the onion. The bulb, which is the part eaten, consists of about twelve to fifteen ovateplong cloves or subordinate bulbs. It has a penetrating and powerful onion-like odor and astringent taste. It owes its poisonous odor to the volatile oil, which is allyl sulphid.

Oil of garlic or essence of garlic, chemically called allyl sulphid, is obtained from the bulb of *allium sativum*.

The chemistry of allyl sulphid, the chemical formula of which is $(C_3 H_5)_2 S$, shows it to be a derivative of allyl alcohol and is the most important ether. Allyl sulphid is obtained by distilling the garlic or onion with the vapors of water. It can also be obtained by synthesis, by treating allyl iodide with potassium sulphid.

It has a colorless to a yellowish color, is heavier than water, has a very nasty penetrating odor, and is but slightly soluble in water, but in addition to other vegetable constituents contains from 50 to 60 percent of mucilage and 20 to 25 per cent of essential oil.

The ancient Galen was guilty of the use of garlic. It was used as an "Alexipharmac," a poison. The common people make great use of it against all intelligent warning. It was also wickedly employed in hydrophobia, by applying the pulp to the part bitten. In the United States it has been used as a prophylactic in infectious diseases in the form of a syrup, a most foolish procedure.

A study of the essential oil, and the experiments performed show that the drug has no value at all except as an abomination, applied to the spine, legs and feet in the form of a poultice; it is a silly and filthy superstition. Internally garlic is used as a stimulating expectorant. Employed at all, it does harm by keeping the doctor away and

delaying correct treatment. Garlic produces indigestion, gastro-intestinal pain, accompanied by vomiting and diarrhoea. If its use is prolonged for a period, it causes gastro-intestinal trouble. When eaten by cattle it imparts a very disagreeable odor to the milk, butter, cheese and other dairy products. In the house or the human stomach, it drives many decent people away.

Ducamp, of the Pasteur Institute, while studying cholera bacilli, found that allyl sulphid was enjoyed by the germ. Dr. Ingianni found that a piece of garlic diluted with water in equal parts did not hinder the development of the cholera bacilli, and that solution of $\frac{1}{2}$ allyl sulphid to 1,000 would kill adults. Onions and garlic may cause vomiting, nausea, colic, and dysentery.

There should be a new hygienic law of Moses, forbidding the use of onions or garlic in any human or animal food.

Impure Olive Oil

For the first time in years the labels on Olive Oil cans and bottles cannot be depended upon. The Michigan Food and Drug Department is finding the popular brands to contain in some instances a small amount of olive oil and in others none at all.

Peanut oil, cottonseed oil and corn oil are the most common adulterants. Only one brand of olive oil out of five examined recently was pure olive oil.

The World's Greatest P

The Chicago Permanent Exposition, covering nearly proposition of its kind ever conceived. Visualize, if Square Garden, New York, the Kansas City Convention one roof of twice the combined area, and

The Chicago Permanent Exposition will have on each of its nine floors some phase of American life or industry.

One floor will be devoted to tractors and farm machinery; another to the great American outdoors. The top floor will have a Zoo of both wild and domestic animals native to America.

The Food Industry has been allotted the fifth floor.

All building equipment and fire prevention appliances will be on the sixth floor. Lumber and forestry of American woods will be attractively shown on this floor.

This will continue until every phase of American life and industry will be depicted.

What It Is

This great nine-story fire-proof building with a value of \$5,000,000 is not a dream to be built. It is there ready for you NOW.

The idea of a gigantic permanent exposition for manufacturers of merchandise of all kinds in Chicago, the great central market, originated with Joseph Leiter, representing the Leiter estate, owners of the building.

The building offers unparalleled facilities for display purposes. It is now being overhauled, redecorated and equipped with every conceivable convenience.

The Value

In calculating the value of an exhibit it must be remembered that the Chicago Permanent Exposition is centrally located—State and Van Buren Streets.

The Zoo—with wild and domestic animals—the free use of a convention hall for any association coming to Chicago—a permanent restaurant seating over 1,000 people—a display of every product and equipment raised or made in America. These



Siegel-Cooper Building

THE CHICAGO PERM

THE CHICAGO PER
State, Van Buren and Congress Sts.

Permanent Food Exposition

acres of floor space on its nine floors, is the biggest an, a combination of the Chicago Coliseum, Madison Building—and picture a permanent exposition under grasp the Chicago Permanent Exposition.



SITION, CHICAGO, ILLINOIS State, Van Buren and Congress Streets

features, to say nothing of the national and local advertising, assures a perpetual crowd of visitors to your exhibit.

The Food Industry Has Been Allotted the Entire Fifth Floor

The potential value of an exhibit where crowds are constant and ever-changing will, we think, find a ready response among pure food manufacturers.

Here the public can be taught what your product is and how to successfully use it—the most difficult problem of every food manufacturer.

Compared with grocery displays or convention exhibits, the Chicago Permanent Exposition will be a revelation to you, for here you have the interest of the visitor who comes for the purpose of seeing and learning—not too busy as at conventions—or loaded down with packages as in a store.

On this floor will be the largest restaurant in Chicago, seating over a thousand at one time.

The food displays will occupy about half the floor—the remainder will be used by the restaurant.

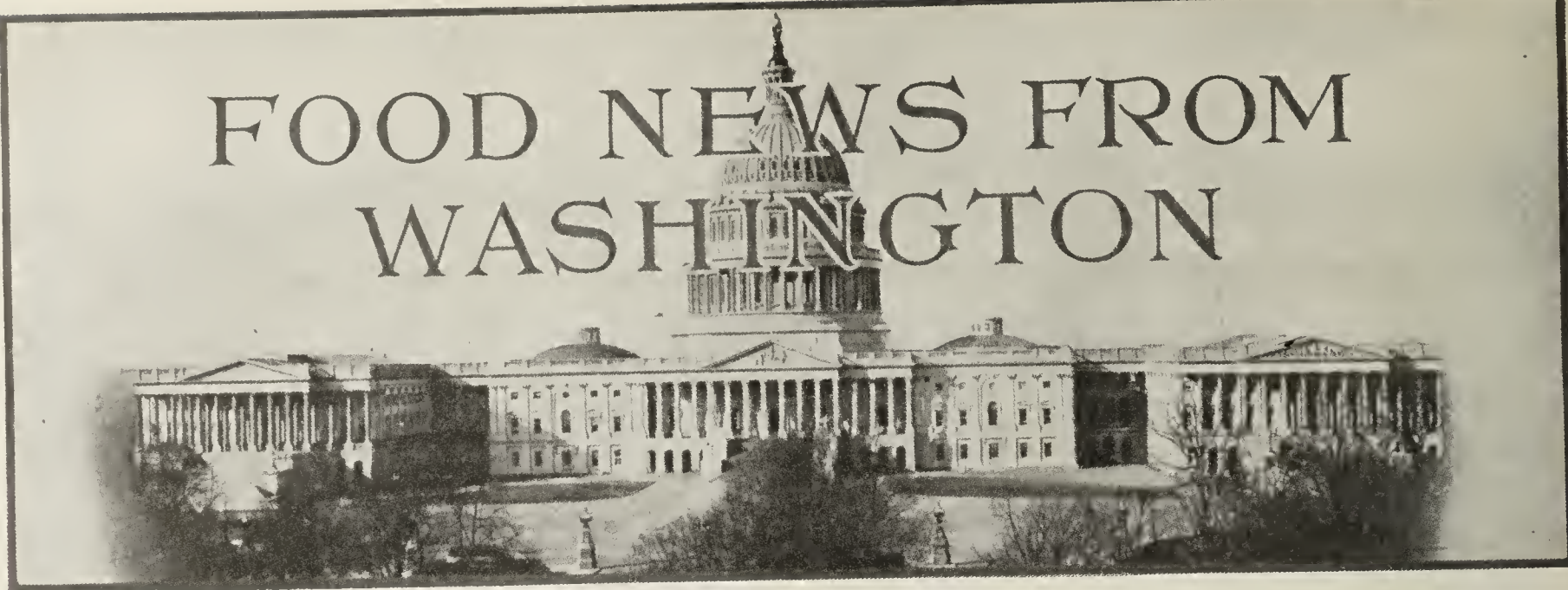
In addition to this, space is at the disposal of exhibitors for sales and association conventions. There are five halls with a seating capacity of 250 each and an auditorium seating 2,000. These assembly halls are at the disposal of the exhibitors absolutely free. No charge for light, heat or service.

When this space is taken, no more is available. We suggest that you get in communication with us at once, as the most desirable locations will be closed first. For a limited time without charge or obligation we will make a reservation to afford an opportunity for examination.

Director General

ANENT EXPOSITION
Chicago

FOOD NEWS FROM WASHINGTON



Guaranteed Price of Wheat to Stand

The guaranteed price of wheat for the 1919 crop stands, by the terms of the Lever Act, under which the United States Food Administration is operating. This statement was made by the Food Administration December 4th.

The President's proclamation of September 2, 1918, stated that the "producers of wheat produced within the United States . . . for the crop of 1919," are guaranteed the prices therein set forth, \$2.26 per bushel at Chicago, and the end of the war or the proclamation of peace does not in any way affect this guarantee.

Section 24 of the Lever Act provides "That the provisions of this Act shall cease to be in effect when the existing state of war between the United States and Germany shall have terminated, and the fact and date of such termination shall be ascertained and proclaimed by the President; but the termination of this Act shall not affect any Act done, or any right or obligation accruing or accrued," etc. It further states that "All rights or liabilities under this Act arising before its termination shall continue and may be enforced in the same manner as if the Act had not terminated."

The guarantee for the 1918 wheat crop expires June 1, 1920.

Sugar Restrictions Have Been Removed

Owing to the increase in the supply of Louisiana cane sugar and western beet sugar, and to the fact that the new Cuban crop is expected shortly, the U. S. Food Administration on December 4 rescinded rules No. 8 and No. 9 from the general orders for public eating places.

These rules forbade the use of the sugar bowl on the table, and limited the service of sugar to 2 teaspoonfuls per person per meal, and to 4 pounds for every ninety meals served, including all uses.

Sugar restrictions have at the same time been removed from the home and consumers are no longer required to observe the ration of 4 pounds of sugar per person per month.

Paris Menus Very Scant

CAPTAIN CHARLES STEWART, 59th Artillery, U. S. Army, just returned to his home in Washington after commanding his battery at St. Mihiel and the Argonne, reports that, on reaching Paris the day the armistice was signed, his first idea of a fitting celebration was a bath, the first in two months, and a dinner which should be a rare relief from the daily diet of bully beef on the fighting line.

"What did you find to eat in Paris?" he was asked.

"Well, you can't get any butter, or sugar, and there's no milk to be had, and no eggs—

"We got eight oysters with green rims on them, a patridge, and another bird, and a steak. The bill was 150 francs for four of us, about \$30 in American cash."

When an American army officer, whom the joyous Parisian populace dragged from his taxi and carried along with kisses and salutations of the greatest festal day in history, hailing him as a hero and a deliverer of France, was denied butter and sugar, milk and eggs on his first day back from the front, the grim truth shows plainly that these things are practically impossible to find. To children, old people, sick people and the wounded men in hospitals, they are indispensable foods.

The United States Food Administration says: "The need to ship food overseas is greater than ever today. Don't stop saving!"

Why White Flour May Be Used Freely

In view of the large number of inquiries as to the reasons for the removal of restrictions upon the use of wheat flour the Food Administration has issued the following statement:

Since its inception the Food Administration's policy has been to adjust its conservation requests with conservation necessities and the public has shown its appreciation of this frankness by immediate response.

Last spring the Food Administration was extremely anxious about the wheat shortage and the public was asked to restrict its consumption of wheat down to the barest necessity in order to meet the need of the Allies. With a surplus of only twenty million bushels of wheat, the American people, through conservation, enabled the Food Administration to ship 141 million bushels of wheat. In spite of this conservation, when we reached the 1918 harvest there was less than a ten-day supply in America.

When the new crop came in it proved to be very large but not too large to take care of the needs at that time. It was the desire of the Food Administration not to be caught another season with any shortage of this most valuable foodstuff, and with the idea that it was necessary not only to continue shipment of wheat to Europe but to build up a big reserve for the 1919 spring offensive the Food Administration continued to ask the people to use wheat sparingly.

The signing of the armistice changed the situation with wheat immediately, just as it did with all measures taken with the needs of a continuing war in view. Wheat supplies in distant countries were made available by the cessation of the submarine menace, and the assurance of a good crop in 1919, undisturbed by war, relieved somewhat the necessity of building up as large a reserve as was anticipated. In other words, it is probable that our normal actual consumption of wheat, implying elimination of waste in which our people have been thoroughly schooled, will be permissible and still allow us to keep the Food Administration's pledge in the shipping of great quantities of bread stuffs to hungry Europe.

American Sugar Refining Company

Sugars

—Our Care in Refining

Expert skill and the most modern and sanitary of refining methods make our sugars supreme in quality, uniformity and cleanliness. We have more than 50 different grades and varieties.

American Sugar Refining Company

The Most Complete Line of Sugar in the World



Average Price per Pound	Average Price per 100 Calories		Lima, Ohio (Typical Small Town)	Buffalo, N. Y.	New York, N. Y.	Trenton, N. J.	Providence, R. I.	Burlington, Vt.	Philadelphia, Pa.	Pittsburgh, Pa.	Washington, D. C.	Cleveland, Ohio	Cincinnati, Ohio	Wheeling, W. Va.
CEREAL PRODUCTS—														
6.4	.39	Wheat flour, war standard, 49-lb. bag.....	\$3.15	\$3.00	\$3.40	\$3.20	\$3.10	\$3.25	\$3.40	\$3.00	\$3.48	\$3.25	\$3.00	\$3.20
7.1	.44	Rye flour, standard, 24½-lb. bag.....	1.65	1.71	1.90	2.15	1.55	1.75	1.90	1.65	1.40	...	1.45	1.60
6.9	.42	Graham flour, 10-lb. bag.....	.65	.70	.80	1.00	.70	.70	.85	.65	.75	.70	.60	.65
11.5	.70	Cornstarch, per lb.....	.12½	.10	.09	.12	.12	.15	.10	.09	.10	.10	.12	.07½
6.5	.40	Corn flour, 5-lb. bag.....	.35	.33	.35	.40	.35	.35	.40	.35	.35	.35	.30	.06
6.3	.38	Cornmeal, per lb.....	.06	.06½	.07	.07	.06	.06	.07	.05	.05	.07	.05	.06
6.3	.38	Barley flour, per lb.....	.07	.07	.08	.07	.06	.07	.10	.07	.07	.08	.07	.07
9.1	.50	Oatmeal, per lb.....	.12	.07½	.08	.08	.07	.07	.10	.09	.10	.08	.07	.08
8.3	.45	Oats, rolled, bulk, per lb.....	.10	.07½	.08	.08	.07	.07	.07	.07	.08	.08	.07	.08
12.5	.76	Rice flour, per lb.....	.15	.17	.12	.14	.12	...	.15	.07	.13	.12	.12½	.18
11.0	.68	Buckwheat flour, per lb.....	.10	.10	.10	.10	.10	.10	.11	.10	.10	...	.10	.11
8.7	.54	Hominy grits, per lb.....	.12	.08	.08	.08	.07	.08	.09	.12	.10	.10	.07	...
11.0	.60	Quaker Oats, 1 lb. 4 oz.....	.13	.14	.11	.11	.11	.15	.14	.11	.15	.15	.12	.14
14.0	.88	Rice, fancy head, per lb.....	.15	.12	.14	.15	.15	.15	.16	.14	.09	.15	.10	.08
12.9	.79	Barley, pearled, per lb.....	.15	.07	.08	.08	.06	.18	.14	.09	.15	.10	.10	.08
9.6	.81	Bread, per lb.....	.10	.10	.10	.09	.08	.10	.08	.09	.09	.10	.10	.10
24.0	1.26	Crackers, graham, per lb.....	.22	.25	.14	.22	.22	.24	.25	.25	.30	.25	.20	.22
23.5	1.22	Crackers, oatmeal, per lb.....	.22	.25	.14	.26	.22	.25	.25	.25	.30	.25	.20	.22
15.9	.97	Macaroni, per lb.....	.15	.14	.15	.14	.15	.18	.25	.12	.50	.15	.15	.14
SUGAR AND SYRUP—														
10.8	.59	Granulated sugar, per lb.....	.11	.10½	.09½	.10½	.10½	.11	.11	.11	.10½	.11	.11	.11
8.6	.59	Corn syrup, 10-lb. pail.....	.90	.85	.90	.75	...	.75	.50	.90	.90	1.20	.80	.75
36.3	.24	Comb honey, per lb.....	.38	.40	.38	.50	...	.38	.50	.25	.45	.50	.45	.50
MISCELLANEOUS—														
32.8	.14	Cocoa, bulk, per lb.....	.25	.25	.32	.30	.25	...	.35	.25	.28	.30	.30	.35
50.0	8.33	Eggs, fresh gathered, firsts, per doz.....	.76	.85	.82	.90	.73	.85	.85	.73	.85	.77	.73	...
7.2	.23	Milk, per quart.....	.15	.16	.14	.14	.16	.15	.14	.15	.17	.15	.14	.14
40.2	.19	Cheese, American, cheddar, per lb.....	.43	.40	.40	.32	...	...	.38	.35	.45	.34	.45	.45
FATS—														
58.7	2.47	Bacon, sliced, per lb.....	.60	.62	.55	.60	.60	.65	.60	.48	.58	.55	.55	.55
70.1	2.00	Creamery butter, fancy, per lb.....	.74	.70	.72	.80	.66	.70	.80	.68	.76	.74	.75	.75
33.5	1.22	Pure leaf lard, per lb.....	.35	.34	.35	.30	.33	.35	.35	.30	.35	.28	.32	.35
38.1	1.11	Oleomargarine, uncolored, per lb.....	.38	.38	.30	.35	.37	.38	.40	.31	.36	.39	.40	.40
36.0	1.02	Nut margarine, uncolored, per lb.....	.37	.35	.32	.35	.33	.35	.38	.33	.36	.32	.39	.35
108.0	2.70	Italian or Spanish olive oil, per quart tin..	2.25	1.60	2.75	2.80	2.25	2.25	2.00	2.00	2.00	3.00	2.25	2.00
38.6	.96	Cottonseed oil, per quart tin.....	.85	.90	.55	.85	.70	...	.90	.90	.75	.80	.75	...
38.5	.96	Corn oil, per quart tin.....	.90	.75	.75	.75	.70	...	.75	.80	.75	.80	.75	.75
47.0	1.17	Peanut oil, per quart tin.....	.80	1.00	.85	1.00	1.00	...	1.00	1.10	1.25	...	...	...
29.9	1.09	Peanut butter, per lb.....	.35	.27	.35	.24	.33	.20	.40	.27	.25	.25	.30	.30
FRUITS—														
21.1	1.59	Evaporated apples, per lb.....	.20	.21	.20	.25	.15	.25	.25	...	.15	...	...	...
21.0	1.75	Evaporated peaches, per lb.....	.20	.17	.18	.18	...	.23	.25	.20	.20	.20	.20	.22
16.0	7.60	Canned peaches, No. 2½, Std., 1 lb. 13 oz..	.30	.40	.28	.33	.25	.35	.35	.25	.30	.35	.25	.30
17.6	2.50	Canned pineapples, No. 2½, Std., 1 lb. 14 oz.	.40	.35	.38	.38	.35	.40	.40	.25	.35	.35	.35	.35
16.0	1.02	Raisins, seeded, per pkg., 15 oz.....	.17	.15	.15	.15	.15	.15	.16	.15	.13	.12	.15	.15
17.2	1.40	Prunes, medium sized, per lb.....	.25	.22	.16	.20	.15	.18	.20	.15	.18	.15	.20	.20
VEGETABLES—														
3.1	1.03	White potatoes, per lb.....	.03	.03	.03	.03	.03	.03	.03½	.02½	.03½	.03	.03	.03
6.0	1.33	Sweet potatoes, per lb.....	.10	.08	.07	.05	.07½	.07	.05	.05	.08	.08	.06½	.07
4.3	2.15	Onions, per lb.....	.05	.03	.13	.03	.04	.05	.02½	.03	.03	.05	.03	.13
15.1	.96	Navy beans, dry, per lb.....	.15	.16	.14	.14	.14	.13	.16	.13	.15	.15	.14	.14
14.4	16.00	String beans, canned, No. 2, Std., 1 lb. 3 oz.	.25	.18	.13	.18	.18	.18	.25	.20	.20	.20	.15	.18
14.4	3.27	Corn, canned, No. 2, Std., 1 lb. 4 oz.....	.15	.19	.18	.18	.18	.20	.22	.18	.20	.23	.15	.19
14.4	5.76	Peas, canned, No. 2, Sd., 1 lb. 4 oz.....	.18	.17	.16	.18	.18	.20	.23	.18	.22	.20	.15	.18
15.9	.99	Split peas, per lb.....	.18	.15	.13	.14	.12	.15	.20	.14	.15	.15	.15	.15
28.6	1.53	Peanuts, unshelled, per lb.....	...	.40	.17	.25	.24	.30	.22	.25	.50	...	.25	...
9.6	9.60	Tomatoes, canned, No. 3, Std., 2 lb. 1 oz...	.25	.23	.25	.22	.22	.25	.25	.20	.25	.25	.22	.23
3.5	2.91	Cabbage, per lb.....	.04	.02½	.04	.03	.03	.05	.03	.03	.02½	.05	.03	.03
4.7	2.76	Beets, per lb.....	.03	.03	.03	.04	.03	.03	.07	.03	.03	.04	...	...
4.3	2.38	Turnips, per lb.....	.05	.02½	.03½	.04	.04	.03	.07	.03	.02	.04	.02½	.10
MEATS AND FISH—														
35.8	5.50	Beef, round steak, per lb.....	.38	.40	.45	.45	.45	.50	.50	.38	.42	.30	.32	.35
42.0	8.40	Veal cutlets, per lb.....	.40	.45	.50	.50	.68	.60	.60	.48	.55	.32	.40	.45
33.1	3.80	Leg of mutton, per lb.....	.40	...	.26	.38	...	.35	.33	.48	.33	...	.25	.35
37.9	4.51	Leg of lamb, per lb.....	.45	.35	.38	.38	.37	...	.38	.48	.40	.37	.35	.40
41.7	3.39	Pork chops, per lb.....	.40	.45	.49	.45	.42	.40	.45	.50	.45	.40	.38	.40
55.1	2.90	Ham, sliced, medium fat, per lb.....	.60	.65	.50	.50	.70	.65	.65	.50	.50	.50	.55	.48
43.5	15.00	Chickens, broilers, per lb.....	.40	.45	.45	.60	.50	.50	.60	.50	.45	.45	.40	.40
29.7	8.25	Salt cod, per lb.....	.30	.25	.35	.28	.30	.30	.35	.28	.30	.28	.30	.22
27.7	2.77	Salt mackerel, per lb.....	.35	.35	.32	.20	.22	.30	.35	.25	.30	.30	.25	.25
33.5	7.44	Halibut, per lb.....	.35	.35	.35	.40	.42	.40	.40	.35	.40	.30	.30	...
33.3	5.20	Salmon, per lb.....	.35	.30	.40	.40	.40	.20	.45	.35	.40	.30	.25	.25
30.5	4.76	Salmon, canned, No. 1, Red Alaska, 1 lb..	.30	.30	.27	.28	.30	.30	.25	.30	.25	.25	.30	.30
30.7	8.29	Trout, per lb.....	.35	.25	.85	...	...	...	.35	.26	.30	.30	.25	...
25.6	8.00	Whitefish, per lb.....	.35	.25	.30	.25	...	...	.30	.26	.30	.30	.25	...

PRICES

1918

Lynchburg, Va.	Raleigh, N. C.	Lexington, Ky.	Nashville, Tenn.	Atlanta, Ga.	Montgomery, Ala.	New Orleans, La.	Little Rock, Ark.	Topeka, Kans.	Chicago, Ill.	Indianapolis, Ind.	Detroit, Mich.	Madison, Wis.	Des Moines, Ia.	Fargo, N. D.	Lincoln, Neb.	Reno, Nev.	Denver, Colo.	Tucson, Ariz.	Berkeley, Cal.	San Francisco, Cal.	Portland, Ore.	Seattle, Wash.
\$3.20	\$3.25	\$3.20	\$3.00	\$3.20	\$3.30	\$3.92	\$3.00	\$2.95	\$3.00	\$2.95	\$2.98	\$3.10	\$3.05	\$2.90	\$3.10	\$3.10	\$2.91	\$3.03	\$3.15	\$3.20	\$3.00	\$3.02
2.00	.75	.65	.65	.65	.65	.80	.65	.75	.68	.55	.55	.65	.80	.70	.60	.75	.75	.70	.72	.70	.65	.65
.10	.15	.13	.10	.12	.12	.13	.10	.12	.10	.10	.12	.10	.13	.12	.12	.12	.15	.10	.15	.12 1/2	.12	.12 1/2
.50	.06	.06	.05	.05	.05 1/2	.06	.05 1/2	.06	.05 1/2	.06	.06	.07	.06	.07	.07	.07 1/2	.06	.07 1/2	.07 1/2	.07	.07 1/2	.07
.10	.07	.08	.05	.05	.05	.10	.06	.06	.05 1/2	.05 1/2	.05 1/2	.07	.07	.07	.06	.07	.07	.05	.07 1/2	.07 1/2	.07	.07
.10	.10	.10	.07 1/2	.10	.10	.07 1/2	.10	.15	.10	.08	.06 1/2	.06	.12 1/2	.12	.12 1/2	.12	.12 1/2	.05	.10	.10	.10	.08 1/2
.12 1/2	.10	.12 1/2	.10	.10	.14	.15	.15	.11	.10	.12	.13 1/2	.13	.12 1/2	.12	.12 1/2	.12	.12 1/2	.15	.10	.09	.08	.07 1/2
.10	.10	.10	.06	.06 1/2	.06 1/2	.06	.07	.07	.07	.08	.08	.08	.10	.10	.10	.10	.12	.15	.15	.12 1/2	.10	.12 1/2
.15	.15	.15	.12	.12 1/2	.13	.12 1/2	.12	.15	.13	.15	.13	.15	.15	.12	.15	.15	.15	.15	.15	.15	.15	.15
.15	.15	.15	.12 1/2	.12 1/2	.12 1/2	.11	.14	.15	.13	.15	.15	.15	.15	.12	.15	.14	.15	.15	.12	.12 1/2	.15	.14
.10	.10	.10 1/2	.10	.10	.08	.10	.10	.10	.10	.10	.08	.09	.10	.12	.10	.10	.10	.08	.10	.10	.10	.10
.35	.20	.40	.30	.40	.17	.25	.22	.22	.22	.23	.22	.22	.25	.20	.20	.32	.20	.17 1/2	.25	.25	.23	.20
.35	.20	.40	.25	.40	.17	.25	.18	.22	.22	.22	.22	.22	.25	.20	.20	.32	.20	.17 1/2	.25	.25	.23	.25
.15	.20	.20	.12	.18	.20	.10	.12 1/2	.15	.15	.15	.18	.20	.13	.15	.14	.12	.10	.10	.12 1/2	.12 1/2	.10	.15
.11	.11	.11	.11	.10 1/2	.11	.10 1/2	.11	.11 1/2	.10 1/2	.11	.10 1/2	.11	.11	.11	.10	.11	.13	.11 1/2	.11	.11	.11	.10 1/2
.85	1.00	.82	.75	.79	.92	1.00	.70	.95	.75	.75	.83	.70	.85	.80	.90	.93	.95	1.00	.95	.90	1.05	.95
.30	.25	.40	.40	.35	.40	.40	.30	.35	.43	.33	.35	.40	.40	.40	.40	.25	.56	.40	.35	.35	.30	.35
.45	.70	.70	.70	.65	.70	.75	.68	.74	.74	.65	.64	.75	.49	.60	.90	.85	.85	.85	.85	.83	.80	.80
.12	.16	.20	.20	.20	.20	.18	.18	.15	.15	.14	.15	.14	.15	.13	.15	.15	.13	.18	.14	.14	.16	.15
.40	.42	.40	.40	.40	.44	.45	.45	.45	.40	.45	.38	.42	.45	.40	.38	.35	.40	.40	.38	.35	.40	.34
.60	.70	.40	.60	.60	.55	.60	.65	.62	.55	.45	.60	.55	.50	.62	.65	.60	.60	.60	.65	.65	.65	.65
.35	.35	.35	.30	.30	.32	.34	.35	.33	.35	.33	.35	.35	.35	.32	.36	.35	.35	.33 1/2	.30	.30	.35	.34
.40	.45	.40	.30	.30	.39	.35	.33	.40	.38	.40	.37	.40	.40	.36	.34	.40	.40	.40	.40	.40	.43	.45
.35	.45	.30	.30	.35	.39	.30	.40	.37 1/2	.37	.37	.35	.35	.35	.33	.34	.35	.35	.38	.38	.40	.43	.38
2.00	1.50	2.50	2.00	1.95	1.75	1.75	1.65	1.80	3.25	2.75	2.25	2.40	1.40	2.00	1.95	2.40	1.90	1.65	1.50	1.85	1.10	1.10
.75	.50	.60	.70	.75	.80	.75	.39	.85	.70	.90	.85	.75	.65	.75	.85	.75	.85	.75	.60	.65	.80	.70
.75	.75	.75	.65	.75	.75	.75	.38	.75	.70	.80	.68	.75	.75	.65	.75	.85	.75	.85	.70	.60	.75	.70
.40	.30	.25	.30	.30	.35	.25	.30	.25	.30	.25	.28	.25	.25	.28	.35	.30	.35	.40	.30	.30	.22	.40
.18	.17 1/2	.15	.17	.17 1/2	.23	.20	.19	.25	.25	.25	.25	.25	.35	.22	.18	.25	.25	.25	.20	.20	.20	.20
.20	.20	.20	.20	.20	.20	.20	.19	.20	.18	.18	.30	.25	.25	.25	.25	.14	.25	.20	.25	.20	.25	.20
.30	.38	.25	.25	.30	.34	.30	.25	.35	.30	.33	.35	.30	.25	.21	.25	.30	.30	.35	.30	.30	.25	.35
.35	.35	.45	.35	.35	.30	.30	.40	.35	.30	.35	.40	.35	.35	.25	.35	.28	.40	.35	.30	.30	.32 1/2	.35
.18	.20	.15	.15	.17 1/2	.18	.18	.15	.17	.15	.15	.15	.15	.15	.12	.15	.14	.15	.20	.15	.15	.15	.15
.15	.20	.16	.15	.17 1/2	.20	.15	.14	.17	.18	.18	.17	.18	.18	.15	.14	.18	.17	.20	.12 1/2	.12 1/2	.17 1/2	.15
.04	.06	.03	.03 1/2	.03	.05	.05	.03	.03	.02 1/2	.03	.02	.03	.02 1/2	.02	.02	.02	.02 1/2	.03 1/2	.04	.03 1/2	.02	.02 1/2
.04	.05	.06	.04	.02 1/2	.03	.05	.04	.05	.07	.07 1/2	.08	.07	.08	.10	.07	.05	.07	.06 1/2	.05	.04	.05	.05
.05	.10	.04	.05	.05	.05	.05	.03	.05	.04	.03	.03	.04	.03	.02 1/2	.03	.02 1/2	.03	.03 1/2	.03	.02 1/2	.02	.03 1/2
.18	.20	.16	.12 1/2	.15	.20	.15	.14	.15	.15	.15	.13	.13	.15	.15	.15	.16	.15	.15	.15	.14	.12 1/2	.15
.20	.20	.20	.12 1/2	.20	.15	.20	.18	.22	.20	.17	.20	.20	.20	.15	.15	.20	.20	.20	.20	.17 1/2	.20	.20
.20	.23	.20	.15	.22 1/2	.25	.20	.18	.18	.20	.18	.23	.18	.15	.19	.15	.15	.20	.20	.18	.20	.20	.15
.20	.25	.20	.15	.20	.24	.18	.18	.20	.20	.18	.17	.15	.15	.15	.18	.15	.20	.20	.18	.18	.20	.20
.30	.20	.20	.15	.20	.20	.15	.09	.14	.20	.14	.18	.18	.19	.16	.14	.25	.15	.12 1/2	.12 1/2	.12 1/2	.11	.11
.30	.30	.30	.22	.20	.07	.80	.18	.30	.25	.25	.25	.25	.25	.25	.25	.30	.30	.30	.30	.25	.25	.25
.20	.17 1/2	.25	.20	.22	.20	.20	.21	.25	.23	.25	.23	.22	.20	.23 1/2	.25	.25	.20	.15	.15	.20	.25	.25
.04	.05	.03	.02 1/2	.04	.05	.06	.03	.02 1/2	.03	.04	.03	.03	.03	.03	.05	.02 1/2	.03	.05	.02 1/2	.03	.04	.03
.04	.20	.10	.05	.05	.06	.05	.03	.03	.03	.03	.03	.04	.04	.05	.02 1/2	.03	.05	.05	.05	.05	.05	.02 1/2
.04	.02 1/2	.03	.03	.03	.05	.06	.05	.02	.03	.03	.05	.04	.04	.05	.04	.02	.03	.05	.05	.05	.05	.03
.35	.40	.35	.40	.27 1/2	.30	.35	.35	.35	.38	.40	.35	.26	.35	.23	.34	.32	.30	.35	.30	.30	.34	.30
.40	.45	.34	.40	.35	.38	.35	.40	.40	.35	.55	.45	.35	.30	.25	.33	.40	.35	.45	.40	.40	.30	.35
.35	.40	.30	.30	.30	.38	.35	.35	.30	.28	.55	.30	.25	.25	.25	.30	.28	.25	.45	.30	.32 1/2	.28	.30
.40	.40	.35	.35	.40	.38	.38	.40	.40	.40	.55	.35	.30	.40	.35	.34	.45	.40	.50	.45	.37 1/2	.38	.35
.40	.45	.35	.40	.40	.40	.45	.40	.40	.45	.43	.35	.35	.40	.35	.34	.45	.40	.50	.45	.45	.42	.42
.55	.50	.50	.60	.50	.40	.50	.55	.65	.55	.60	.45	.65	.50	.50	.60	.60	.60	.50	.60	.60	.55	.46
.45	.45	.45	.36	.40	.50	.38	.45	.40	.35	.30	.35	.28	.35	.28	.36	.50	.35	.45	.25	.25	.22	.16
.30	.40	.25	.32	.30	.25	.35	.35	.30	.30	.30	.30	.30	.30	.30	.30	.30	.35	.45	.30	.30	.26	.20
.25	.25	.35	.20	.30	.25	.30	.25	.30	.25	.30	.30	.30	.35	.30	.33	.12 1/2	.25	.30	.30	.35	.30	.25
.30	.39	.35	.30	.35	.23	.25	.30	.30	.30	.30	.30	.30	.40	.35	.35	.30	.40	.30	.30	.30	.30	.30
.20	.27 1/2	.30	.20	.25	.23	.35	.30	.28	.30	.27	.28	.35	.35	.29	.29	.35	.40	.30	.30	.30	.30	.30
.20	.12 1/2	.30	.20	.20	.20	.35	.30	.28	.30	.30	.30	.30	.35	.29	.29	.35	.40	.30	.30	.30	.30	.30

War on Egg Substitutes

(Continued from Page 666)

teaspoonful of a mixture of equal parts of dried milk and cornstarch, which are the essential ingredients of most of the brands on the market.

The practice of combining ingredients to be found in every household and after giving the mixture a fancy name, selling it for many times its value, should be discouraged by every means possible. In many instances the package selling for 25 cents does not cost more than 5 or 6 cents to the manufacturer; hence the effort to introduce these preparations.

Another very important criticism that can be brought against these products,

ingredients already in the household, cannot be made to do the work just as well.

CONCLUSIONS AND REMARKS

First. The brightest light of publicity should be shed upon these products and the heaviest weight of official authority should be invoked to discourage their manufacture and sale.

Second. They afford an opportunity for unpatriotic profiteering, combined with the development of the art of camouflage to the point of perfection.

Third. Their names are deceptive; their composition in no wise resembles that of egg; the presence of color, in

EGG SUBSTITUTES

The composition of the foregoing samples in the order given, was found to be as follows:

Name of Article	Color	Fat %	Protein %	Ash %	Results of Microscopic Examination
Agg-O-La	Coal tar	0.44	25.37	3.55	One-half cornstarch
Ailgo	Coal tar	0.20	16.23	9.50	One-half starch—principally cornstarch
Allenegg	Coal tar	3.70	4.02	0.95	Principally cornstarch.
Madam Blumer's Eggsaver.	Coal tar	0.26	0.70	0.25	Principally cornstarch.
Ecc-Kon-O-My	None	1.35	4.24	3.70	Principally cornstarch.
Ecc-o-gene	Coal tar	0.88	23.75	1.20	Over half cornstarch.
Eggatine	Coal tar	0.32	25.60	2.60	Over half cornstarch.
Eggette	Coal tar	1.40	28.00	3.65	Over half cornstarch.
Eggine	Coal tar	0.95	32.00	6.30	About half cornstarch.
Egg-kon-o-my	None	1.60	3.85	3.70	Principally cornstarch.
Egg-less'	Coal tar	0.61	15.21	10.20	Over half cornstarch and rice starch.
Eggnit	Coal tar	1.10	7.26	7.00	Principally cornstarch.
Eggno	Coal tar	4.45	10.71	2.95	One-half tapioca starch.
Egg-nu	Coal tar	7.87	26.80	10.65	About one-half cornstarch.
Egg-o	Coal tar	2.25	13.30	7.50	Over one-half cornstarch.
Egg-o-gene	Coal tar	0.37	23.36	1.70	Over one-half cornstarch.
Eggola	Coal tar	6.68	13.16	2.80	Over one-half cornstarch.
Egg-o-lieu	Coal tar	1.5	5.25	1.5	Principally cornstarch.
Eggoline	Coal tar	0.75	24.76	1.90	Over one-half cornstarch.
Egg-o-no	Coal tar	0.88	19.86	10.10	Over one-half cornstarch.
Egg-o-thrift	Coal tar	1.5	4.55	3.50	Principally cornstarch.
Egg-sub	Coal tar	1.30	2.45	3.90	Principally cornstarch.
Egg-vito	Coal tar	1.15	4.55	4.20	Principally cornstarch.
Egis	Coal tar	0.22	3.23	1.05	Principally cornstarch.
Eg-no	Coal tar	7.7	14.52	7.7	Over one-half cornstarch.
Eg-save	None	1.25	13.56	0.90	Principally cornstarch.
Egg-conserver, Fletcher's..	None	0.37	23.88	3.65	Over half cornstarch.
Magic Egg Saver, Ward's..	Coal tar	3.26	15.48	9.40	Over one-half wheat flour and rice starch.
Magic Egg Saver, Sherer-Gillette Co.....	None	24.38	21.13	7.45	Tapioca starch.
Miracle Egg Displacer.....	Coal tar	2.24	26.07	1.95	Over one-half cornstarch.
Near Egg	Coal tar	0.71	27.12	2.45	Over one-half rice starch.
No-egg	Coal tar	1.14	10.06	7.40	Over one-half cornstarch.
Repeat Brand	Coal tar	1.61	14.43	8.25	Over one-half cornstarch.
o-EGG-o	Coal tar	1.70	25.30	2.10	Over one-half cornstarch.
Paragon Egg Substitute....	Coal tar	0.72	35.82	2.60	About one-half rice starch.
Sa-van-egg	None	2.05	5.15	3.90	Principally cornstarch.
Savaegg	Coal tar	2.0	23.80	2.0	Over one-half cornstarch.
Shobe Special	Coal tar	29.05	20.16	4.10	Potato starch, tapioca starch, rice starch, cornstarch.
Snow Mellow	None	0.80	33.07	1.20	About one-half cornstarch.
Stewart Special	Coal tar	28.50	20.12	1.90	Potato, tapioca, rice and corn starches.
Wizz-o-la	Coal tar	4.00	5.25	0.75	Principally cornstarch.
Yelco	Turmeric	5.12	20.60	5.12	Over one-half rice and corn starches.

as a class, is their variability as regards certain brands. As many as three different styles of packages have been found in some particular brands. The composition has also been found to vary within certain lines and some packages are without artificial coloring while others, of the same brand, are found to contain it.

Some few are sold as leavening agents, making no claim for egg value whatever. In these cases there is no reason, from the consumer's standpoint, why baking powder or some other leavening ingredient or combination of in-

those where it is used, is a fraud and the claims as to replacing value are either deliberate misstatements or ambiguous phrases.

Finally. Egg substitutes serve no purpose that cannot be served just as satisfactorily and much more cheaply by articles in daily use in every household.

Harrisburg, Pa., June 11, 1918.

"I fully concur in the statements and conclusions of Professor Charles H. LaWall in the matter of so-called egg substitutes."

JAMES FOUST,
Dairy and Food Commissioner.

A Forecast of 1919

(Continued from page 659)

margarine and butter and that there is a common ground where the interests of both may meet and sign an armistice, and this subject will be a feature article of one of our early issues.

Dehydration, an article on which appears in this number, is a big proposition to be taken up and worked out by the food conservationists and it will receive further consideration in these columns.

Substitute foods will always receive a great deal of attention in this publication both in their legal and their food value aspects.

The movement to encourage and enlarge the dairy production of this country, the effect of the war on the dairy situation in Europe and how that will affect this country will be discussed.

The packaging and shipment of food and other problems of distribution will be taken up in order by those who know.

These are but a few of the things that will be written about in the coming issues of The American Food Journal.

No efforts will be spared to make the utterances of this publication during the coming year authoritative and educational in character, and we have been promised the support and assistance of many of the keenest minds in the country.

We mean more than a mere boast in that last statement, as we have deliberately set about to make this publication the most valuable of its kind by bringing to its readers the findings and opinions of many minds, the results of the work of many experts, and we shall strive at all times to avoid the stigma of reflecting the opinions of one man, or one class of men.—
The Editor.



THE following patents of interest to readers of this journal recently were issued by the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trademark attorney, Real Estate Trust Building, Washington, D. C., at the rate of 20c each. State number of patent and name of inventor when ordering.

1,279,562. Machine for stacking and packaging bakery products. Walter E. Lowell, New York, N. Y., assignor to National Biscuit Co., same place.

1,280,009. Device for smoking meats. William Fullard, Burlington, N. J.



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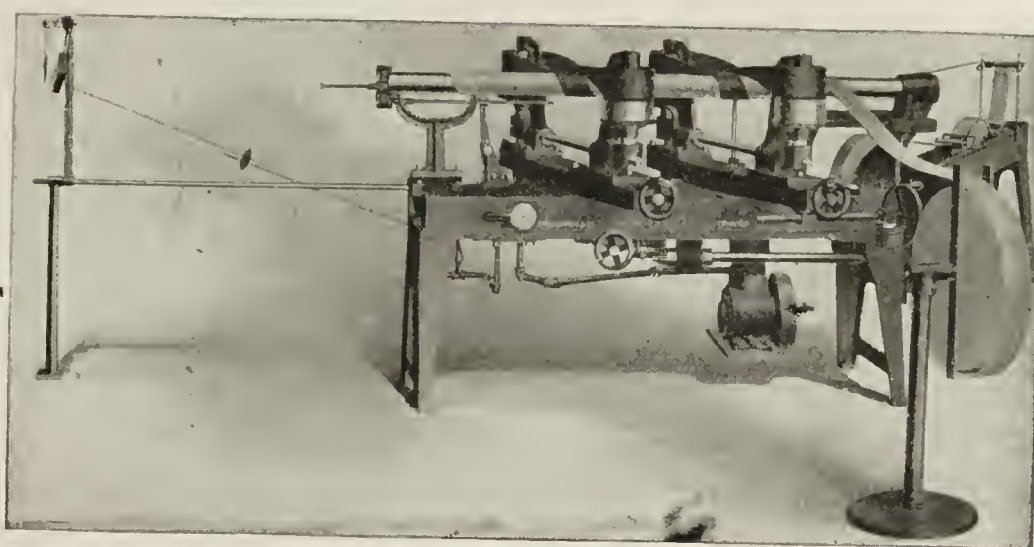
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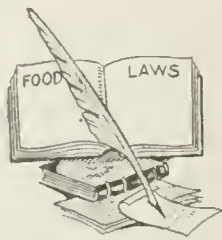
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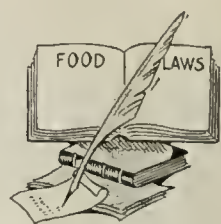
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JUDGMENTS *under the* FOOD and DRUGS ACT



Beans

5888. **Adulteration of beans.**
Beans which contained filthy and decomposed animal and vegetable substance, to-wit, weevil and dirt, were held to be adulterated. On November 15, 1917, the defendants pled guilty and were fined \$25.
5919. **Adulteration and misbranding of baked beans.**
Decomposed beans which were labeled "Baked Beans" and which had been cooked by another process, were held to be adulterated and misbranded. On December 20, 1917, no claimant having appeared, the product was destroyed.
5920. **Adulteration of pork and beans.**
Decomposition was held to constitute adulteration. On December 20, 1917, no claimant having appeared, the product was destroyed.
5921. **Adulteration and misbranding of red kidney beans and adulteration of pork and beans.**
Decomposition of the pork and beans was held to constitute adulteration. The other article, which was labeled "Red Kidney Beans—Packed to conform with the National Pure Food Laws," was held to be adulterated and misbranded because the beans were decomposed and were not fit for human consumption, as everything should be which is packed to conform with the National Pure Food Laws. On September 15, 1917, the defendants pled guilty and were fined \$25 and costs.
5922. **Adulteration of pork and beans.**
Decomposition was held to constitute adulteration. On December 20, 1917, no claimant having appeared, the product was destroyed.
5936. **Adulteration of pork and beans.**
Decomposition was held to constitute adulteration. On September 17, 1917, the defendants pled guilty and were fined \$50 and costs.
5952. **Adulteration of beans and coffee.**
Decomposition of the beans and the presence of coffee chaff in the coffee, which had been substituted in part for coffee, was held to constitute adulteration. On January 9, 1918, the defendant pled guilty and was fined \$25 and costs.
5979. **Misbranding of beans.**
An article labeled "Our Leader Brand Beans" was held to be misbranded because it consisted of soya beans and not navy beans, which the article purported to be. On December 14, 1917, claimants having paid the costs of the proceedings, the product was delivered to them under \$1,500 bond, in conformity with section 10 of the act.

Brandy

5963. **Adulteration and misbranding of cognac brandy.**
An article so labeled as to give the impression that it was an important product, and which contained neutral spirits, which had been mixed and packed therewith, was held to be adulterated and misbranded. On February 6, 1918,

the defendants pled guilty and were fined \$50.

5967. **Adulteration and misbranding of so-called Jamaica rum and cognac type brandy.**
Adulteration and misbranding of the two articles labeled as above was alleged because they consisted largely of neutral spirits, and had been artificially colored to simulate the genuine article. On January 28, 1918, the defendants pled guilty and were fined \$50 and costs.
5971. **Adulteration and misbranding of brandy.**
An article labeled "Trester Brandy" was held to be adulterated and misbranded because it contained added neutral spirits. On January 28, 1918, the defendants pled guilty and were fined \$50 and costs.
5975. **Adulteration and misbranding of brandy cognac type.**
An article labeled "Brandy Cognac Type" was held to be adulterated and misbranded because the product consisted wholly of neutral spirits colored with caramel. On December 30, 1917, the defendants pled guilty and were fined \$100.

Catsup

5907. **Adulteration of ketchup.**
Adulteration was alleged because of filth and decomposition. On November 13, 1917, the defendants pled guilty and were fined \$100.
5976. **Adulteration of tomato catsup.**
Decomposition was held to constitute adulteration. On September 25, 1917, no claimant having appeared, the product was destroyed.

Chicorine

5974. **Adulteration and misbranding of "Chicorine."**
Adulteration and misbranding of an article labeled as above was alleged because it consisted of a partly charred cereal product and appeared to contain no chicory. On January 2, 1918, the defendant pled guilty and was fined \$25.

Chocolate Cocoa

5894. **Adulteration and misbranding of cocoa.**
The presence of cacao shells and cacao dust in an article sold as cocoa was held to constitute adulteration and misbranding. On October 15, 1917, the defendants pled guilty and were fined \$10.

Cider & Apple Juice

5911. **Adulteration and misbranding of apple juice.**
An article labeled "Apple Juice" was held to be adulterated and misbranded because fermented apple juice, which had been diluted and sweetened, had been substituted in part for pure apple juice. On November 27, 1917, the defendants pled nolo contendere and were fined \$25.
6008. **Adulteration of apple cider.**
The addition of salicylic acid, a deleterious ingredient, was held to constitute adulteration. On February 11, 1918, no claimant having appeared, the product was destroyed and the empty containers were sold.

Eggs

5876. **Adulteration of eggs.**
Filth and decomposition was held to constitute adulteration. On September 11, 1917, claimant having consented, the product was delivered to him upon payment of the costs of the proceedings and under bond for \$1,929.30, in conformity with section 10 of the act.
5908. **Adulteration of eggs.**
Filthy and decomposed eggs were held to be adulterated. On December 8, 1917, the defendants pled guilty and were fined \$50 and costs.
5924. **Adulteration of eggs.**
Eggs, of which 27.29 per cent were found to be decomposed, were held to be adulterated. On September 17, 1917, the defendants pled guilty and were fined \$25.
5925. **Adulteration of eggs.**
Decomposition was held to constitute adulteration. On October 31, 1917, the defendant pled guilty and was fined \$10 and costs.
5926. **Adulteration of eggs.**
Eggs, of which 53.3 per cent were found to be filthy and decomposed, were held to be adulterated. On September 25, 1917, the defendants pled nolo contendere and were fined \$25 and costs.
5927. **Adulteration of eggs.**
Two cases of eggs were held to be adulterated because 62.2 per cent in one case were found to be decomposed and 96.6 per cent in the other. On January 9, 1918, the defendant pled guilty and was fined \$100 and costs. The indictment as to the other defendants was nol-prossed.
5960. **Adulteration of eggs.**
Adulteration was alleged because the eggs consisted in part of a filthy, decomposed and putrid animal substance. On October 9, 1917, the defendants pled guilty and were fined \$25 and costs.
5962. **Adulteration of eggs.**
Substantially the same as No. 5960.
6010. **Adulteration of shell eggs.**
Filthy and decomposed eggs were held to be adulterated. On September 11, 1917, claimants having admitted the allegations, the good portion was released to the claimants, the unfit portion was destroyed, and the claimants were obliged to pay the costs of the proceedings.
6011. **Adulteration of shell eggs.**
Adulteration was alleged because the eggs consisted in part of filthy, putrid, and decomposed matter. On September 10, 1917, no claimant having appeared, the eggs were carefully candled, the unfit portion destroyed and the good portion sold at public auction.
6012. **Adulteration of shell eggs.**
Substantially the same as No. 6010.
6013. **Adulteration of shell eggs.**
Substantially the same as No. 6010.
6014. **Adulteration of shell eggs.**
Filth and decomposition was held to constitute adulteration. On September 13, 1917, no claimant having appeared, the product was destroyed.
6015. **Adulteration of shell eggs.**
Substantially the same as No. 6015.

(Continued on page 690)

The Package Wind Blows The Langston Way



Feeds

5909. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "41.0 per cent of crude protein and not more than 12.0 per cent of crude fibre" was not substantiated by laboratory analysis, which showed 35.3 per cent of protein and 13.0 per cent of crude fibre. On November 15, 1917, the defendants pled guilty and were fined \$150 and costs.
5910. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "protein 38.60 per cent, fat 7.50 per cent, fibre 12.00 per cent" was not substantiated by laboratory analysis, which showed 36.38 per cent of protein, 5.79 per cent of fat, and 12.93 per cent of fiber. On November 15, 1917, the defendants pled guilty and were fined \$50 and costs.
5912. **Adulteration of horse beans.** Decomposition was held to constitute adulteration. On October 23, 1917, the good portion was released to claimant and the unfit portion destroyed.
5916. **Adulteration and misbranding of cottonseed meal.** Misbranding of the article in one shipment was alleged because the guaranteed analysis of "protein 38.62 per cent, fat 6.00 per cent, and not more than 12.00 per cent of fiber," was not substantiated by laboratory analysis which showed 34.4 per cent protein, approximately 5.7 per cent of fat, and approximately 15.5 per cent crude fiber. Misbranding of another shipment was alleged because the guaranteed analysis of "ammonia 8 per cent, protein 41 per cent, nitrogen 6½ per cent, fibre, maximum, 10 per cent" was

not substantiated by laboratory analysis, which showed 7.55 per cent ammonia, approximately 38.9 per cent of protein, approximately 6.22 per cent of nitrogen, and approximately 12.8 per cent of fiber. Adulteration and misbranding of the third shipment was alleged because it contained only 36 per cent protein, whereas the guaranteed analysis called for 38.63 per cent. On January 23, 1918, the defendants pled guilty and were fined \$200.

5923. **Adulteration and misbranding of wheat middlings.**

The presence of ground screenings in an article labeled wheat middlings, was held to constitute adulteration and misbranding. On November 13, 1917, the defendants pled guilty and were fined \$25 and costs.

5930. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "60 per cent crude fat, 38.3 per cent protein, not more than 12 per cent fiber," was not substantiated by laboratory analysis, which showed 5.6 per cent fat, approximately 35.3 per cent protein and 14.8 per cent fiber. On February 4, 1918, the defendants pled guilty and were fined \$50 and costs.

5933. **Adulteration of cottonseed meal.** Adulteration was alleged because the guaranteed analysis of "protein 41 per cent, nitrogen 6 per cent, ammonia 8 per cent, and fiber not more than 10 per cent" was not substantiated by laboratory analysis, which showed "protein 38.8 per cent, nitrogen 6.2 per cent, ammonia 7.54 per cent, fiber 11.2 per cent. On December 29, 1917, the defendants pled guilty and were fined \$50 and costs.

5943. **Misbranding of cottonseed meal.** Misbranding was alleged because

the guaranteed analysis of "protein, not less than 38½ per cent, nitrogen, not less than 6 per cent, fiber, not more than 10 per cent," was not substantiated by laboratory analysis, which showed protein 35 per cent, nitrogen 5.6 per cent, fiber 13.2 per cent. On January 19, 1918, the defendants pled guilty and were fined \$50 and costs.

5948. **Misbranding of cottonseed feed.** Misbranding was alleged because the guaranteed analysis of "Ammonia 7 per cent, Protein 36 per cent, Nitrogen 5¾ per cent," was not substantiated by laboratory analysis, which showed ammonia 6.11 per cent, protein 31.43 per cent, nitrogen 5.03 per cent. On December 14, 1917, the defendant pled guilty and was fined \$100 and costs.

5949. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "Ammonia 8 per cent, Protein 41 per cent, Nitrogen 6½ per cent, Fiber, maximum, 10 per cent," was not substantiated by laboratory analysis, which showed ammonia 6.73 per cent, nitrogen 5.54 per cent, protein 34.7 per cent, and fiber 14.6 per cent. On October 8, 1917, the defendants pled guilty and were fined \$35.

5959. **Adulteration and misbranding of cottonseed meal.** Adulteration and misbranding was alleged because the guaranteed analysis of "Ammonia 7.50 per cent, Protein 38.63 per cent, Fat 6.00 per cent, Nitrogen 6.18 per cent; Fiber, maximum, 10 per cent." These are minimum guarantees, frequently runs higher fiber, and because the article was labeled "Prime Cottonseed Meal," whereas it was a mixture of cottonseed meal and added hulls and

the laboratory analysis showed it to contain 5.57 fat, 15.35 fiber, 32.81 per cent protein, 5.25 per cent nitrogen and 6.38 per cent ammonia. On January 19, 1918, the defendants pled guilty and were fined \$100 and costs.

5961. **Misbranding of dairy feed.** Misbranding was alleged because the guaranteed analysis of "Protein 16½ per cent, Fat 3½ per cent, Fibre 12 per cent," was not substantiated by laboratory analysis, which showed 15.5 per cent protein, approximately 2.08 per cent of fat, and approximately 20.2 per cent of fiber. On November 19, 1917, the defendants pled guilty and were fined \$50 and costs.
5966. **Misbranding of poultry food.** Poultry food, labeled as consisting of wheat, corn, kaffir, barley, oats, buckwheat, sunflower seed and limestone grit, was held to be misbranded because it consisted of a mixture which contained no sunflower seed or limestone grit. On December 31, 1917, the defendants pled guilty and were fined \$200 and costs.
5968. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "Protein 38.55 to 41 per cent, Crude Fiber 8 to 12 per cent," was not substantiated by laboratory analysis, which showed 36.1 per cent protein and 15.3 per cent crude fiber. On November 27, 1917, the defendants pled guilty and were fined \$50.
5969. **Misbranding of cottonseed meal and feed meal.** Misbranding of the cottonseed meal was alleged because the guaranteed analysis of "Protein 38.62 per cent, Maximum Crude Fiber 10 per cent," was not substantiated by laboratory analysis, which showed 33.1 per cent protein and 11.2 per cent crude fiber. Misbranding of the cottonseed feed meal was alleged because the guaranteed analysis of "Protein 36 per cent" was not substantiated by laboratory analyses which showed in several samples, 33.2 per cent, 31.8 per cent and 32.9 per cent of protein. On September 14, 1917, the defendants pled guilty and were fined \$50.
5972. **Misbranding of cottonseed meal and cottonseed feed.** Misbranding of the cottonseed meal was alleged because the guaranteed analysis of "Ammonia 7½ per cent" was not substantiated by laboratory analysis, which showed in three samples, 6.02 per cent, 5.68 per cent and 6.05 per cent of ammonia. Misbranding of the cottonseed feed was alleged because the guaranteed analysis of "Protein 36 per cent" was not substantiated by laboratory analyses which showed in several samples 31.8 per cent, 30.8 per cent, 32.7 per cent, 32.1 per cent, 30.9 per cent and 31.3 per cent of protein. On September 11, 1917, the defendants admitted the allegations and were fined \$50.
5988. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "Protein 38 per cent, fat 7 per cent and not more than 10 per cent of fiber" was not substantiated by laboratory analysis, which showed 34.7 per cent of protein, 6.05 per cent of fat and 13.2 per cent fiber. On January 19, 1918, the defendants pled guilty and were fined \$50 and costs.
6001. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "Am-

monia 7.50 per cent, protein 38.63 per cent, nitrogen 6.18 per cent, fiber, maximum, 12 per cent," and the statement on the label, "These are minimum guarantees, frequently runs higher," was not substantiated by laboratory analysis, which showed 34.1 per cent protein, approximately 5.46 per cent nitrogen, 14 per cent fiber and 6.63 per cent ammonia. On January 19, 1918, the defendants pled guilty and were fined \$50 and costs.

6003. **Misbranding of cottonseed meal.** Misbranding was alleged because the guaranteed analysis of "Ammonia, minimum, 7½ per cent; protein, minimum, 38.62 per cent; fiber, maximum, 12 per cent," was not substantiated by laboratory analysis, which showed, in several samples, approximately 6.95 per cent, 6.39 per cent, 6.26 per cent and 6.56 per cent of ammonia, approximately 35.8 per cent, 32.9 per cent, 32.2 per cent and 33.75 per cent of protein and 13.85 per cent, 15.4 per cent, 15.95 per cent and 14.6 per cent of fiber. On February 4, 1918, the defendants pled guilty and were fined \$250 and costs.

Fish

5879. **Adulteration of sardines.** Filth and decomposition was held to constitute adulteration. On October 16, 1917, no claimant having appeared, the product was destroyed.
5887. **Adulteration of fish.** Filth and decomposition was held to constitute adulteration. On November 15, 1917, the defendants pled guilty and were fined \$25.
5899. **Adulteration of canned salmon.** Decomposition was held to constitute adulteration. On October 4, 1917, the defendant pled guilty and was fined \$50.
5918. **Adulteration of sardines.** Decomposed and filthy sardines were held to be adulterated. On December 4, 1917, claimants having consented, the product was delivered to them upon payment of the costs of the proceedings and under \$1,000 bond, conditioned in part that the article be properly examined and the unfit portion be destroyed.
5970. **Adulteration and misbranding of whitefish.** An article labeled, "Extra Family Best Grade Cisco White Fish" was held to be adulterated and misbranded because lake herring had been substituted wholly for whitefish. On December 11, 1917, were fined \$30 and costs.
5989. **Adulteration and misbranding of bellycut fish.** Adulteration was alleged because of filth and decomposition; misbranding because the article was food in package form and the quantity of the contents was not stated on the outside of the package in terms of weight, measure or numerical count. On November 10, 1917, claimants having admitted the allegations, the product was sorted and inspected under proper supervision, the unfit portion destroyed, and the good portion released to claimants upon payment of the costs of the proceedings and under \$2,500 bond in conformity with section 10 of the act.
6006. **Adulteration of sardines.** Decomposition was held to constitute adulteration. On November 9, 1917, claimants having consented, the product was examined under proper supervision, the unfit portion destroyed and the good portion released to them upon payment of the costs of the proceedings.

Fruit

5931. **Adulteration of prunes, peaches, apricots, raisins and mucatels.** Adulteration was alleged because of filth and decomposition. On January 9, 1918, the defendants pled guilty and were fined \$100 and costs.

6007. **Misbranding of evaporated apples.**

Misbranding was alleged because the package contained less than the stated weight of 16 ounces, and the quantity of the contents was not plainly and conspicuously marked on the outside of the package. On November 13, 1917, the defendant pled guilty and was fined \$25.

Jelly

5878. **Adulteration and misbranding of jelly.**

Articles labeled "Pure Jelly Grape and Apple," "Pure Jelly Raspb'y and Apple," "Pure Jelly Currant and Apple" and "Pure Jelly Crabapple" were held to be adulterated and misbranded because the articles were made imitation of the real substances, and contained no ingredient or substance as called for on the label. On November 20, 1917, the defendants pled guilty and were fined \$200.

Gelatin

5954. **Adulteration and misbranding of gelatin.**

An article invoice as pure food gelatin was held to be adulterated and misbranded because of the addition of glue, which contained excessive amounts of zinc and copper, which had been substituted for pure food gelatin, and which rendered the article injurious to health. On October 6, 1917, claimants having consented, the product was released to them upon payment of the costs of the proceedings and under \$1,000 bond in conformity with section 10 of the act, conditioned upon proper labeling.

5954. **Adulteration and misbranding of gelatin.**

Substantially the same as No. 5954.

5956. **Adulteration and misbranding of gelatin.**

Substantially the same as No. 5954.

5958. **Adulteration of gelatin.**

An article labeled as "Ice Cream Special Gelatin" was held to be adulterated because it contained added poisonous and deleterious ingredients, viz., arsenic, copper and zinc, and was unfit for use as food. On October 24, 1917, claimants having consented, the product was released to them upon payment of the costs of the proceedings and under \$1,000 bond, in conformity with section 10 of the act.

5977. **Adulteration of gelatin.**

The addition of zinc was held to constitute adulteration. On August 13, 1917, claimants having admitted the allegations, the product was released to them upon payment of the costs of the proceedings and under \$500 bond, in conformity with section 10 of the act.

5978. **Adulteration and misbranding of gelatin.**

An article labeled "Powdered Gelatin," was held to be adulterated because it contained excessive amounts of zinc, and misbranding was alleged because it was an imitation of the genuine article. On August 30, 1917, claimant having admitted the allegations, the product was released to him upon payment of the costs of the proceedings and under \$1,000 bond, in

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Continued from Page 686

conformity with section 10 of the act, conditioned upon proper labeling.

5991. Adulteration and misbranding of gelatin.

An article labeled "Pure Food Gelatin" was held to be adulterated and misbranded because glue, containing excessive amounts of zinc and copper, had been added and substituted for pure food gelatin. On October 6, 1917, claimants having consented, the product was released to them upon payment of the costs of the proceedings and under \$1,000 bond, in conformity with section 10 of the act, conditioned upon proper labeling.

6009. Adulteration of gelatin.

Gelatin which contained arsenic, copper and zinc was held to be adulterated. On October 31, 1917, claimants having consented, the product was delivered to them upon payment of the costs of the proceedings and under \$1,000 bond, in conformity with section 10 of the act.

6017. Adulteration and misbranding of gelatin.

An article sold as edible gelatin was held to be adulterated and misbranded because it was composed of glue, which contained excessive amounts of zinc and copper. On November 13, 1917, claimant having consented, the product was delivered to him upon payment of the costs of the proceedings and under \$1,000 bond, in conformity with section 10 of the act, conditioned in part that the article be labeled "Not to be used for food or for the manufacture of food articles."

Meat

- 5883. Adulteration of hamburger steak.** Adulteration was alleged because the article contained an added deleterious ingredient, to wit, sodium bisulphite. On September 28, 1917, the defendant pled guilty and was fined \$20.

Milk

- 5884. Adulteration of milk.** Substantially the same as No. 5880.
- 5880. Adulteration of milk.** Milk to which had been added water was held to be adulterated. On August 14, 1917, the defendant pled guilty and was fined \$10.
- 5881. Adulteration of milk.** Substantially the same as No. 5880; fine, \$50.
- 5882. Adulteration of milk.** Substantially the same as No. 5880.
- 5885. Adulteration of milk.** Substantially the same as No. 5880; fine, \$20.
- 5886. Adulteration of milk.** Substantially the same as No. 5880; fine, \$30.
- 5940. Adulteration of milk.** Milk from which butter fat, a valuable constituent of the article, had been in part abstracted, was held to be adulterated. On November 12, 1917, the defendant pled guilty and was fined \$25 and costs.
- 5964. Adulteration of milk.** Added water was held to constitute adulteration. On December 11, 1917, the defendant pled guilty and was fined \$50.
- 5965. Adulteration of milk.** Substantially the same as No. 5964.
- 5986. Adulteration of milk.** Adulteration was alleged because of decomposition and filth. On January 7, 1918, the defendants

pled guilty and were fined \$25 and costs.

- 5987. Adulteration of milk.** Substantially the same as No. 5986.
- 5992. Adulteration of milk.** Added water was held to constitute adulteration. On December 11, 1917, the defendant pled guilty and was fined \$1.
- 5993. Adulteration of milk.** Substantially the same as No. 5992; fine \$50.
- 5994. Adulteration of milk.** Substantially the same as No. 5992; fine, \$50.
- 5995. Adulteration of milk.** Adulteration was alleged because butter fat had been wholly or in part abstracted. On December 11, 1917, the defendant pled guilty and was fined \$50.
- 5996. Adulteration of milk.** Substantially the same as No. 5992; fine \$25.
- 5997. Adulteration of milk.** Substantially the same as No. 5992; fine \$50.
- 5998. Adulteration of milk.** Substantially the same as No. 5992; fine \$50.
- 5999. Adulteration of milk.** Substantially the same as No. 5995.

Syrups

- 5938. Misbranding of "Eastern Star Maple Flavor Sugar Butter Mixture."** An article labeled as above, and also "25 per cent corn syrup, small amount of corn syrup to prevent crystallization," was held to be misbranded because it contained more than 25 per cent of corn syrup. On December 18, 1917, the defendants pled guilty and were fined \$25 and costs.
- 5947. Misbranding of "Eastern Star Maple Flavor Sugar Butter Mixture."** Substantially the same as No. 5938.
- 5982. Misbranding and alleged adulteration of "Maple Etta Syrup."** An article labeled as above and also "produced by the delicate blending of sugar syrup, cane and maple etta syrups" was alleged to be adulterated and misbranded because it contained no maple syrup and was an imitation of what the article purported to be. On December 11, 1917, the defendants were found guilty of the charge of misbranding and not guilty of adulteration, and the first defendant was fined \$100 and the other defendant \$50.

Tomatoes and Tomato Pulp

- 5914. Adulteration and misbranding of tomato pulp.** An article labeled "Tomato Pulp" and "Made from Tomatoes, Pieces of Tomatoes and Tomato Trimmings" was held to be adulterated and misbranded because it contained added starchy material, which was identified as a wheat product and which is not an ingredient of tomato pulp. Misbranding was further alleged because the quantity of the contents was not plainly and conspicuously marked on the outside of the package. On January 9, 1918, the defendants pled guilty and were fined \$100 and costs.
- 5915. Adulteration of tomato pulp.** Decomposition was held to constitute adulteration. On January 9, 1918, the defendant pled guilty and was fined \$100 and costs.
- 5939. Adulteration of tomato pulp.** Decomposition was held to constitute adulteration. On December 6, 1917, no claimant having ap-

peared, the product was destroyed.

- 5950. Adulteration of tomatoes.** Added water was held to constitute adulteration. On October 2, 1917, the defendants pled guilty and were fined \$50.
- 5981. Adulteration and misbranding of "Red Conserve."** Adulteration of an article labeled as above was held because of decomposition, and misbranding because of the statement on the label, "A blend of 75 per cent tomatoes, 10 per cent selected fruits and vegetables and 15 per cent salt, sugar and spices," whereas it was found to contain approximately 55 or 65 per cent of tomatoes and 20 or 30 per cent of selected fruits and vegetables. On October 8, 1917, the defendants pled guilty and were fined \$350.
- 5983. Adulteration and alleged misbranding of tomato pulp.** Adulteration was held because of decomposition, and the charge of misbranding because the quantity of the contents was not plainly and conspicuously marked on the outside of the package in terms of weight, measure or numerical count, was nolle prossed. The defendants pled guilty to the charge of adulteration and were fined \$100 and costs.

Vegetables

- 5990. Adulteration of cabbage.** Decomposition was held to constitute adulteration. On August 21, 1917, claimants having consented, the product was delivered to them upon payment of the costs of the proceedings and under \$287.50 bond, in conformity with section 10 of the act.

Vinegar

- 5892. Adulteration and misbranding of vinegar.** An article labeled "Simon Pure Apple Cider Vinegar" was held to be adulterated and misbranded because of the addition of distilled vinegar or dilute acetic acid, phosphoric acid and ash materials, which had been substituted in part for pure apple cider vinegar. On January 4, 1918, the defendant pled guilty and was fined \$50 and costs.
- 5900. Adulteration and misbranding of vinegar.** An article labeled "Capitol Pure Apple Vinegar 40 grain" and "New York State Pure Apple Cider Vinegar, Diluted to 4½ Acetic Strength," was held to be adulterated and misbranded because it contained dilute acetic acid or distilled vinegar, and was a mixture of less than 40 grain, or 4½ per cent acetic strength. On November 27, 1917, the defendants pled guilty and were fined \$50.
- 5905. Adulteration and misbranding of vinegar.** An article labeled "Russet Brand Apple Cider Vinegar" was held to be adulterated and misbranded because of the addition of dilute acetic acid or distilled vinegar, which had been substituted in part for apple cider vinegar. On November 27, 1917, the defendants pled nolo contendere and were fined \$25.
- 5917. Adulteration and misbranding of vinegar.** An article labeled "Williams Pure Apple Cider Vinegar, Full Strength," was held to be adulterated and misbranded because it had been mixed with dilute acetic acid or distilled vinegar, and was an imitation of pure apple cider vinegar. On January 27, 1917, claimant having consented, the

(Concluded on page 700)

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food problem

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— — — — —

The American Food Journal

15 S. Market St., Chicago

Chicago Now Planning Permanent Exposition

THAT Chicago is to have a Permanent Exposition building in which an immense amount of floor space will be given over to the permanent exposition of foods is assured by the announcement that the Siegel Cooper building, owned by the Leiter estate has been dedicated to exposition purposes and that the Leiter estate is back of the enterprise.

While, of course, the building will house permanent exhibitions of other than food products, what is of particular interest to all who have to do with the food manufacture or distribution of food products is that one entire floor with an area of 56,000 square feet will be devoted exclusively to the exhibition of foods and to the service of pure foods of all kinds and another floor will be given over to the exhibition of domestic animals from which much of our food and clothing supplies come.

While the plans for the Permanent Exposition are ambitious in the extreme, that they are looked upon as practical is vouched for by the fact that many of the large manufacturers and distributors have already contracted for space and are already going ahead with their preparations for installing exhibits.

The immensity of this enterprise can be appreciated when one considers the fact that the total floor space of this building exceeds the combined floor area of any four of the largest public buildings devoted to exhibitions or shows in the country. In it will be housed not only exhibits of the newest and best products and processes illustrative of the economic activities of America but there will be in addition permanent exhibits of living domestic and wild animals collected from all parts of the world.

The fifth floor will be known as the Pure Food floor. Here the growers, manufacturers and distributors of all kinds of food products will display their wares and will give demonstrations of food preparation and food service. East, west, north and south will send their best and the only condition of entry that would bar any, other than the limitation of space, is that the food exhibited must be approved of by the pure food authorities of the country.

On the fifth floor, in addition to the exhibition space is a restaurant where 1,000 people can be served at one time and kitchens for the preparation of the food served. There is a refrigerator on this floor with ice capacity of five tons.

It is planned that in addition to the regular form of food displays there shall be shown from time to time moving pictures illustrative of various food subjects.

The promoters of this enterprise desire to make the building not only a permanent exposition but also a permanent convention place and one entire floor will be devoted to convention purposes. This space will be given over to the holding of conventions without charge—floor space, heat, light and service being given free. The convention floor may be used as one large hall or it can be divided into small meeting places according to the needs of the moment.

A. B. Hulit, director general of the Permanent Exposition, announces that the work of decorating the interior of the building, arranging the exhibits, etc., will be completed and the exposition ready for the public about March 1.

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are now owned by more
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We will continue to
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Unmarked Packages

HOLDING that the packing of two ounces or less of foodstuffs in cartons capable of containing much more than two ounces does not permit the manufacturer to take advantage of the concession under the food law that says that packages of two ounces or less need not be marked with the net weight, John B. Newman, superintendent of foods and dairies for the state of Illinois has started action against two concerns which put out spices.

The two cases cited, one against an Illinois concern and the other against a Missouri concern, will be watched with interest because they are the first of the kind to be tried out.

In these cases the concerns are said to be putting out for sale cartons which might hold four or five ounces of spices but which in reality hold two ounces or less. The net weight of the contents of the package does not appear on the label.

When the men responsible for the packages of spices appearing for sale on the shelves of grocers in this state were called into Mr. Newman's office they claimed that they were within the law inasmuch as the contents of the package was two ounces or less.

Mr. Newman replied that the large packages worked a deception on the public and that unless the net weight was printed on the packages he would start action.

The reason given for putting the small quantity of spices in so large a package was that racks had been placed in the grocery stores which accommodated a certain sized package and that when the war caused an increase in the cost of spices instead of increasing the price of the packages the producers reduced the quantity in the cartons, selling the packages for about the same price.

The cases will probably be prosecuted to a finish to test the correctness of Mr. Newman's interpretation of the intent of the law.



JANUARY, 1919

National League of Commission Merchants
January 7, 8, 9, 10, 1919, at Boston, Mass.

H. W. Clark, Chairman Publicity Committee

National League of Commission Merchants

January 8, 9 and 10, 1919, at the Copley Plaza Hotel, Boston, Mass.

R. S. French, General Manager and Secretary, New York City

National Cannery Association
January 20, 1919, Hotel La Salle, Chicago.

Frank E. Garrell, Secretary, 1739 H St., N. W., Washington, D. C.

National Canned Foods and Dried Fruit Brokers Association

January 20, 1919, at the Hotel La Salle, Chicago, Ill.

Jas. M. Hobbs, Secretary, Hearst Building, 326 W. Madison St., Chicago, Ill.

The National Pickle Packers Association
January 21 and 22, at the Palmer House, Chicago, Ill.

F. A. Vickers, 326 W. Madison St., Chicago, Ill.

Coffee Convention

ABOUT 200 representatives from all parts of the country attended the annual convention of the National Coffee Roasters' Association which was held in Cleveland the first week of December which was presided over by F. J. Ach of Dayton.

Perhaps the most interesting feature of the meeting was the resolution demanding that the Food Administration lift the lid on its restrictions on coffee trading on exchange. This was framed by a committee, which was authorized, if necessary, to visit Washington and follow up the purpose of the resolution into action.

The committee comprised some of the heavy-weights of the organization, including the past presidents. Its personnel included Ross W. Weir of New York, J. F. Ach of Dayton, O. B. C. Cassenas of New Orleans, Charles Lewis of Cincinnati, Robert M. Forbes of St. Louis, C. Arndt of New York, L. McDowell of Chicago, Oscar Remmer of Chicago and L. M. Goll of New Orleans. This committee framed the following resolution, which was unanimously adopted and was wired to Washington:

Coffee Men's Protest.

"The coffee trade of the United States in meeting assembled at the city of Cleveland, December 5, 1918, notes with extreme concern the increasing gravity of the situation entailed by the short supply of coffee in the United States. This in the face of the largest accumulation of stocks in the producing countries ever known. Such shortage due to Government restrictions having superseded the laws of supply and demand, which Governmental action has resulted in tying the hands of the coffee dealers of the United States, but has left foreign interests free to advance prices to the extreme. This situation has already resulted in a radical increase in cost of roasted coffee to the consumer, an advance that, unchecked, will more than double the normal price of coffee unless a remedy be found.

"As a matter of fact, the higher cost thus far paid by the consumer does not begin to equal the increased cost to the roasting distributor. The restric-

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You don't know how good Margarine is until you have tried Moxley's. Be fair to yourself and try it with your next meal.

Churned by **Wm. J. Moxley, Chicago**
INCORPORATED

tions imposed by the Food Administration which the coffee trade has loyally accepted while we were in the throes of war, were enacted with the express purpose of keeping the price of coffee unchanged during the war period.

"The war conditions are rapidly passing. The continuance of these restrictions, however serviceable they may have been during the war period, now fail to serve the best interest of the coffee consumers of this country, and are jeopardizing the very existence of the coffee industry of the United States, and give the foreign producers the sole benefit in the extreme advances that have already occurred.

"The certain and unprecedented further advance in the cost of the roasted product to the consumer, should present regulations be maintained, argue unanswerably for the removal of all such barriers to free and untrammelled trading.

"With their removal, and the trade allowed to proceed with the conduct of business in like manner as in the pre-war period, the price of coffee, now mounting upwards by leaps and bounds in producing countries, would respond to natural economic laws and would benefit the coffee industry of this country, and ultimately, the consuming public as well.

"With the gradual lessening of the price of food commodities, we consider it unjust to the public that coffee should sharply advance, when by governmental co-operation such advance might be checked.

"Therefore, be it resolved that the coffee trade of the United States in convention assembled, petition the United States Food Administration to remove all restrictions, forthwith, thereby conserving the safety and interest of an important industry and of the consuming public as well."

It did not meet wholly with success, though perhaps as degree of effect. The reply received was as follows:

Ross W. Wier, National Coffee Roasters' Association, Cleveland, O.:

"Your telegram fifth received. The Food Control Act remains in effect until the fact of peace is proclaimed by the President. His proclamation of July 30, requiring all persons engaged in the green coffee business to obtain a license and to observe the rules and regulations, cannot be rescinded by the Food Administration. They are charged with the responsibility of carrying out this proclamation and by means of licensing enforce the provisions of the food act by which hoarding and unreasonable profit are made illegal.

"The amended rules handed Mr. Dorr, chairman of the committee who conferred with us, are as far toward removing the restrictions as we deem necessary and will not in our opinion have any bearing one way or the other on the course of Brazilian or other speculators.

"Signed, Food Administration,
"Coffee Section."

Soda Water Convention

THE annual convention of the National Manufacturers of Soda Water Flavors was held in the rooms of the Chemists Club, New York, December 2nd and 3rd, and was attended by a large representation of the manufacturers of colors and other sup-

plies used in the soft drink bottling industry, manufacturers of soda fountains, soda fountain machinery, soda fountain products and syrups and of carbonic gas.

Owing to the fact that the industries of the country are just on the verge of conversion from a war time to a peace time basis the prospect for business during the reconstruction period; the proposed national taxes and national legislation affecting the soft drink industry and other weighty subjects having to do particularly with the national program of reconstruction, occupied much of the thought and time of the convention and were thoroughly discussed. At the end of this discussion, however, it was decided that because of the uncertainty of the passage of the pending revenue bill in the form in which it had been drafted and because of the impossibility of foreseeing the solution of many of the problems of business during the reconstruction period the wise policy would be to await developments—the Association, meanwhile, holding itself ready to deal promptly and effectively with important matters as they should come up.

There was no uncertainty, however, in the action which the convention took regarding the Food Inspection Decision of the Secretary of Agriculture in defining the standards for ginger ale flavor, ginger ale, sarsaparilla flavor and sarsaparilla and the following resolution was passed:

Whereas, in and by Food Inspection Decision No. 177, the Secretary of Agri-

GLENN H. PICKARD

Chemical Engineer

9 S. Clinton St., Chicago, Ill.

Consultant in the Design and Operation of Plants for the Manufacture, Refining and Use of Vegetable Oils.

culture of the United States adopted and published definitions and standards for ginger ale flavor and ginger ale and sarsaparilla flavor and sarsaparilla, which definitions and standards are not correct or proper definitions and standards, because:

1st—They fail to recognize caramel color as a normal and necessary ingredient of said products; and

2nd—Because they fail to recognize no capsicum as a normal ingredient of ginger ale flavor and ginger ale and one which may or may not be used without any qualification of the names "ginger ale flavor" or "ginger ale" and without any declaration on the labels of said products; and

3rd—Because they fail to recognize harmless retaining substances as normal ingredients of said products and which may or may not be used without declaration on the labels of said product; and

Whereas, said definitions and standards in the respects mentioned utterly ignore the standards which have always universally been recognized for said products by the trade and the public alike, which well recognized standards are as follows:

Ginger ale and soda water flavor is a water soluble compound, the predominating flavor of which is derived from ginger, with other aromatics, condimental and flavoring substances, which may include

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U. S. P.

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capsicum, lemon, limes, cloves, cinnamon, orange, rose, vanilla, etc., and with or without caramel color;

Ginger ale is a carbonated beverage made from a syrup flavored with ginger ale soda flavor, containing caramel as a color and acidulated, and with or without foam; sarsaparilla soda water flavor is a water soluble compound, containing oil of wintergreen, or oil of sweet birch or methyl salicylate and oil of sassafras, other essential oils and flavoring materials and with or without caramel color. It does not of necessity contain any extract of sarsaparilla root;

Sarsaparilla is a carbonated beverage made from a syrup containing sarsaparilla soda water flavor, made with or

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without an acidulant, and colored with caramel, with or without foam;

Therefore, be it resolved that we condemn the action of the Secretary of Agriculture in ignoring the standards that have always been recognized for said products as aforesaid and for arbitrarily adopting and publishing other and different standards for the same; and that, for the reason stated, he be requested to recall the Food Inspection Decision referred to in order that those not familiar with the subject may not further be deceived and misled by said decision.

The officers elected for the ensuing year were as follows: President, Mr. Samuel H. Mutch of Whittle & Mutch, 176 West York St., Philadelphia, Pa.; Vice-President, Mr. C. Blair Leighton of W. J. Bush & Co., 100 William St., New York City; Treasurer, H. E. Harrison, Liquid Carbonic Co., 3100 South Kedzie Ave., Chicago; Secretary and Attorney, Thomas E. Lannen, 1238 First National Bank Bldg., Chicago, Illinois. Directors—the above officers and: W. W. Maltby, Liquid Carbonic Co., 3100 South Kedzie Ave., Chicago; W. F. Meyer, of the Warner-Jenkinson Co., 2526 Baldwin St., St. Louis, Mo.; P. N. Conron of Conron & Co., 265 West Broadway, New York City; Charles O'Connor of S. Twitchell Co., 225 Vine St., Philadelphia, Pa.; M. M. Lowenstein of Monarch Mfg. Co., Atlanta, Ga.

Mr. Lannen was appointed a representative of the association to attend the special meeting of the Chamber of Commerce of the United States, being held in Atlantic City this week, to consider problems dealing with reconstruction, and Mr. D. W. Hutchinson of Chicago was appointed national counselor to the United States Chamber of Commerce.

(Continued from page 690)

product was released to him upon payment of the costs of the proceedings and under \$1,000 bond, in conformity with section 10 of the act.

5935. Adulteration and misbranding of vinegar.

A product labeled "Pure Apple Cider Vinegar Reduced to 4 Per Cent" was held to be adulterated and misbranded because of the addition of dilute acetic acid, or distilled vinegar, which had been substituted in part for pure apple cider vinegar. On November 13, 1917, the defendants pled guilty and were fined \$25.

5941. Adulteration and misbranding of vinegar.

A product labeled "Apple Vinegar" was held to be adulterated and misbranded because of the addition of water. On October 9, 1917, the defendant pled nolo contendere and was fined \$25.

5953. Adulteration and misbranding of vinegar.

A product labeled "Pure Apple Cider Vinegar Reduced to 4 Per cent" was held to be adulterated and misbranded because of added distilled vinegar or dilute acetic acid. On November 13, 1917, the defendants plead guilty and were fined \$25.

5984. Adulteration and misbranding of vinegar.

Adulteration and misbranding of an article labeled "Apple Cider Vinegar" was alleged because the article was a mixture composed of dilute acetic acid or distilled vinegar and mineral matter.

Convention Commission Merchants

THE twenty-seventh Annual Convention of the National League of Commission Merchants will be held in Boston January 7 to 10, 1919, and the executive committee that has charge of the preparations reports "everything all set."

Mr. Collins, as chairman of the department of registration, is preparing a booklet which will contain the names of all the houses represented in the association and the names of all the representatives attending. This booklet will be ready for distribution to all who attend the convention.

Mr. Lawrence of the Hotel Committee is assisting prospective guests to secure accommodations and he asks that those who decide at the last minute to attend can be accommodated if they will wire him in care of Curtis & Co., Boston.

Mr. Cummings, in charge of entertainment, has arranged with the Schubert crowd for an entire floor and boxes for a mighty fine show during the week of the convention, and he has also in charge the "Get-Together" night, Tuesday.

Mr. Arthur Clifford announces that everything is ready for the big banquet, and the well-known "old standby," A. Warren Patch, pioneer in convention matters, as chairman of the reception committee, will take care of all guests, meeting all incoming trains. He has asked that those who come to Boston over the N. Y., N. H. & Hartford detrain at the Back Bay station and passengers on the New York Central and the Boston & Albany roads leave the trains at the Huntington Avenue station.

Mr. Hall, chairman of the Ladies' Entertainment Committee, with his lieutenants, Mrs. Barron (formerly Miss Ruth Patch), Mrs. Hall, Mrs. York and Mrs. Hearty, promises a busy week for the ladies who attend the convention, offering a wide variety of activities. A double program has been arranged—one for mild weather and an alternative in case the weather becomes inclement.

Mr. York, as president of the Boston branch, is the chief who is seeing to it that all the convention machinery is well oiled and in good working order.

Plan Organization

THE National Dairy Council and the allied state creamery associations held meetings in Chicago recently and not only talked organization but made considerable advance toward accomplishing their idea.

One of the speakers placed the total production of milk at 43,000,000,000 quarts, produced by 23,000,000 cows. The production of butter and cheese runs into the millions of dollars in value and this great industry is not organized except in states or localities. Most other great lines of industry are closely organized and labor is organized; but the business of dairying has gone on taking things as they come and doing the best under the circumstances; but not getting the recognition desired or deserved.

During the trials and vexations and hardships under war conditions, said one of the speakers, protests have been made by existing organizations when some ruling was considered a hardship on the dairy industry; but there has

been no organization to go to Washington with a constructive proposition to meet the situation. There has been no organization that could claim to represent the millions of persons concerned and command a hearing.

The National Dairy Council is organizing the producers, the allied creamery associations are getting the manufacturers into a strong body to handle the manufacturers' problems and the butter and egg boards and exchanges are preparing to take care of the interests of wholesalers and jobbers. Before many more months, says Chicago Dairy Produce, the great dairy industry will be able to make itself heard and felt in Washington.—*Dairy Produce.*

Hog Prices to Stand

Two conclusions in the hog situation resulted from meetings held in Chicago December 4 and 5. It was decided that the price of hogs for January shall be continued on the same basis as in November and December. Throwouts are to include pigs under 150 pounds, stags, boars, thin sows and skips. Also, effective December 5, the shipping embargo was lifted and free shipping recommended.

Because of the shortage of labor at the slaughtering centers, occasioned by the influenza epidemic and by the large number of men withdrawn for military service, the slaughterers have found difficulty in handling the large supplies of live stock which have been coming to market during the past month. To control the situation it became necessary for the Food Administration to request the Railroad Administration to apply an embargo which was lifted. This aided in controlling the situation, although the shipping permit system which necessarily accompanied the embargo proved to be cumbersome.

The recent very heavy runs at the principal markets indicates that there may be in the country a larger number of hogs than the heretofore published estimates show. It is hoped that the runs of hogs to the markets and shipments on foreign orders will be of such reciprocal volume that the packing centers can now handle them without the embargo.

The meetings in Chicago were participated in by representatives of the United States Food Administration, the committee of packers sharing in foreign allotment orders, representatives of the agricultural advisory committee and special representatives for the swine producers.

According to the British Board of Agriculture the number of hogs in Germany now numbers about 5,000,000 as compared with 27,000,000 before the war.

Restrictions against the shipping of wheat flour to the West Indies, Mexico, Central and South America have been lifted and pre-war shipments may now be resumed. The export of flour rather than wheat is made possible by increased ocean tonnage made available since the signing of the armistice.



WHILE they save at the spigot is what folks do when they save paper to the loss of more scarce and costly products, which might be protected and preserved with paper.

Save paper—if you judiciously can—but don't do it when you have to sacrifice something more closely connected with feeding people.

Millions of dollars worth of food even now being wasted, can be saved by the use of vegetable parchment and waxed papers. Many big food leaks have been stopped with vegetable parchment and waxed paper. Before you cut down on the use of paper, you better be dead sure you are not wasting at the bunglehole while you save at the spigot.

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THE AMERICAN FOOD JOURNAL



December 1918



To Every Man Who Sells Fleischmann's Yeast

During this Holiday Season the bells are sounding a deeper note of liberty, of loyalty and of devotion to our common cause. More than ever, we appreciate the spirit of co-operation and good will you have shown us.

Our best wishes for your success during the New Year.

The Fleischmann Company
"Fleischmann's Yeast"

How do your products arrive—Over There?

Manufacturers of foods and allied products are exporting today where formerly their output was utilized for domestic consumption. They are therefore, confronted with problems in wrapping and packing that are entirely new to them.

As Diamond-F Protective Papers are made to protect products from contaminating influences of various kinds, there is surely one that can settle this more or less vexing problem for you.

If you are in need of papers that are waterproof, airproof, greaseproof, and alkaliproof, get working samples at once of

Diamond-F Protective Papers

Glassine

Greaseproof

Vegetable Parchment

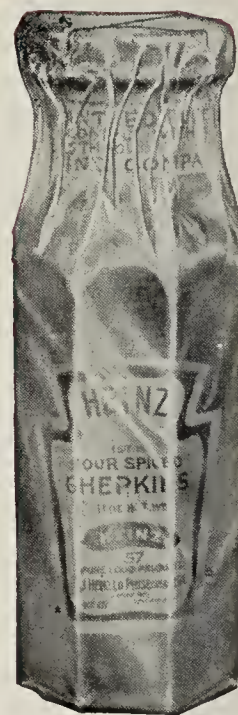
Parchmoia

They may be had in sheets, rolls, and circles. All are pure cellulose and free from oils, chemicals, waxes, metals, etc.

*Ask your jobber or write
direct to us*

Diamond State Fibre Company
Bridgeport, Pa., (Near Philadelphia)

Also makers of Diamond Fibre—
"A Remarkable Material"



This well known product gets there looking just as fine as when it left the factory because wrapped in DIAMOND-F GLASSINE.

Meeting Present Day Needs



Food Conservation has proved an education to us all!

The RYZON Service Staff itself never realized the adaptability of RYZON until, one after another, our accustomed ingredients were curtailed and "substitutes" confronted us on every hand.

But the RYZON Conservation Recipes were promptly developed and in all cases RYZON justified its title of "The Perfect Baking Powder." With the coarser flours as well as with sugar substitutes, the results from RYZON baking combine satisfaction with economy.

The new edition of the RYZON Baking Book contains the Conservation Recipes prepared by the RYZON Service Staff and approved by the United States Food Administration.

RYZON is 40c per pound. The RYZON Baking Book (original price \$1.00) will be sent upon receipt of 30c in stamps or coin except in Canada.

RYZON
THE PERFECT BAKING POWDER

GENERAL CHEMICAL CO.
FOOD DEPARTMENT
NEW YORK



Wheat Kernels

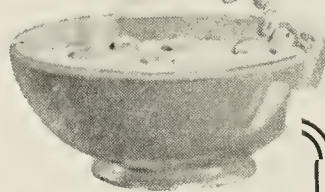
*Puffed to Bubbles, Eight
Times Normal Size*

That is Puffed Wheat—whole grains, steam exploded.

They come to you as bubbles—airy, flaky, flimsy morsels, but still in the wheat-grain shape.

The purpose of puffing is to blast every food cell, so the whole wheat becomes wholly digestible.

It is done by Prof. Anderson's process. The grains sealed in guns are revolved for an hour in 550 degrees of heat.



Each grain contains some 125 million food cells. Each cell holds a trifle of moisture which this heat turns to steam.

When the guns are shot each cell explodes. That means 125 million explosions inside every kernel. The fearful heat gives to the kernels a taste like toasted nuts.

The explosion makes the kernel a flimsy, flaky tidbit.

The blasted food cells make it easy to digest. And every atom feeds.

There is no other wheat food in existence so good to the taste, or good for you.

**Puffed
Wheat**

**Puffed
Rice**

**Corn
Puffs**

All Bubble Grains

Each 15c Except in Far West

Also With Melted Butter

Puffed Grains are served like other cereals, but also in unique ways.

In saving sugar, countless homes now serve them with melted butter.

They are ideal morsels—thin, crisp, toasted—to float in bowls of milk.

Crisped and lightly buttered, they are food confections for children after school.



The Quaker Oats Company

Sole Makers

(2032)

THE AMERICAN FOOD JOURNAL

C. A. PATTERSON
PUBLISHER

15 S. Market St., Chicago

VOL. XIII

DECEMBER, 1918

No. 12

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Issued monthly by
THE AMERICAN FOOD JOURNAL
15 So. Market St.
Journal Building, Chicago

A Chat With You

NO doubt you will be surprised (agreeably, I sincerely hope) to find your magazine this month in a new dress, and even more so perhaps on learning that its ownership, too, is different. We are of the belief, however, that the mere change of ownership is of little interest unless this reflects in the magazine itself.

Now, a word about the change in makeup. We look upon publishing your magazine about the same as you consider a meal. You select a restaurant to eat that must be clean, the table linen, silver, dinner ware, spotless. A meal served in such an atmosphere you relish. Food cooked perhaps just as well, served to you in a greasy, dirty basement with questionable service, would take away your appetite. All of which might seem to you far from publishing your magazine, but don't you see that with enameled covers in color, and (what we hope you will agree) attractive three-column makeup, we are endeavoring to furnish the pleasant atmosphere to induce an appetite for reading the magazine.

In our Rotary Club, the motto is "He profits most who serves best." This best describes our ambitions in becoming your publishers. As an experienced publisher, I realize that only through giving you the best I have within me can I hope to merit your confidence. I appreciate that we will get only as we give. That is why we want to give you a magazine which you will welcome to your desk, and be proud to leave it on top of the heap. We don't want to get letters saying "please cut our name off as we don't have time to read it." We want to make the AMERICAN FOOD JOURNAL so valuable, so full of "things you want to know," that you won't want to get along without it.

While I know most of you haven't a lot of time to devote to helping us publish the Journal, yet a suggestion for an article or a brick bat will be most warmly welcomed.

We have no pet theories to air, no expert opinions to expound, no ideas other than to keep our "eye on the ball"—the "ball" as we see it, a food magazine of scientific information in readable American language—a digest of Government reports without the dryness—articles of value without a twist of partiality—facts without embellishment, and a thorough analysis of food legislation. In brief, the kind of a magazine you want.

The Spread for Bread



Mr. Dealer

are you selling "Swift's Premium" Oleomargarine?

The rising cost of food has further increased the popularity of "Swift's Premium" Oleomargarine.

The housewife has discovered in it a pure, wholesome and nutritious product containing all the essential food elements and one that does not decrease the former standard of living.

"Swift's Premium" will build up for you a good, steady, profitable trade.

It will pay you to take out a license if you do not have one.

The profit on three 30 lb. cases will practically pay for the license.

Ask our Salesman for Particulars

Swift & Company

Whiter—Sweeter—Lighter Bread and Cake

The first essential of success in home baking is to employ a leavener that is pure, thorough and dependable—one that raises evenly, and gives the bread and cake the right texture, and appetizing appearance—and makes them easily digested. The purity, uniform strength and perfect keeping qualities of

Rumford

THE WHOLESOME
BAKING POWDER

insures whiter, sweeter and lighter cake and bread—it raises the baking just right, and adds to the nutritive value, as it restores phosphatic elements equivalent to those which fine wheat flour loses in the process of milling.

Every Housewife, Dietitian, Domestic Science Teacher and Lecturer should have a copy of "Rumford Dainties and Household Helps." We will be pleased to send it free upon request.

RUMFORD CHEMICAL WORKS,
Providence, R. I.

L.71 10.17



We believe we should be the instrument, not the hand; the vehicle, not the power. The magazine is yours. We simply compile, arrange and index the best each month for your convenience. Our intelligence in doing this will largely depend upon your co-operation.

Need I add in closing that there are no "interests" back of us, that not one dollar has been asked or taken from anyone in the food industry? We are not and never will be subsidized.

We go on record with you that we come to you with the American Food Journal unfettered and unhampered by any other influence than a sincere desire to give you the kind of a magazine you deserve.

Our initial effort is our first step. We ask your indulgence. If it does not measure up to your standard, give us your suggestions. We are with you to stay. Help us make good.

C. A. Ratterson

Publisher

THERE IS

CLEANLINESS, HEALTH
INSURANCE, ECONOMY
AND CONVENIENCE IN



Our **PET**
BRAND
Evaporated
Milk

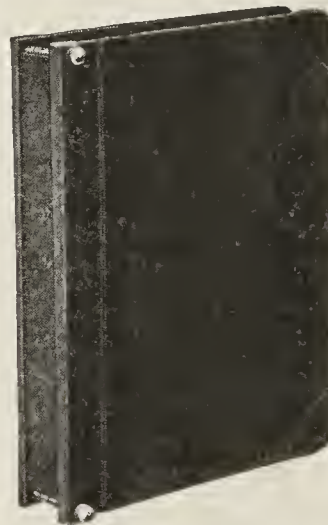
The Standard of the World

Wins and Holds Trade on
account of its Superior Quality

PREPARED BY

Helvetia Milk Condensing Co.
HIGHLAND, ILLINOIS

ORIGINATORS OF EVAPORATED MILK



Now is the Time—

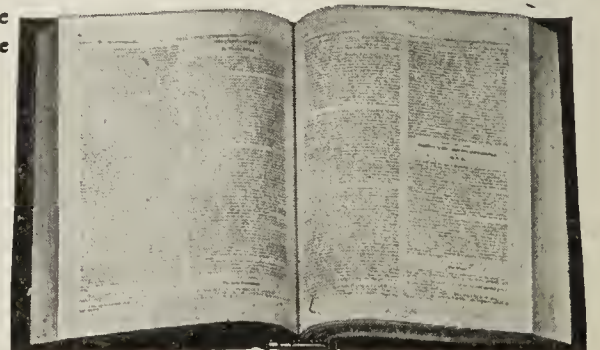
to bind the copies of your magazine in the Dowst Magazine Binder. It is the best and most substantial binder that has ever been brought to our attention and we know that it has no superior at the present time.

The Dowst Binder has no cumbersome back and will hold one copy flat as well as twelve. The binder is well made and finished in a high-class manner. The words, "THE AMERICAN FOOD JOURNAL" are stamped on the front cover in gold leaf. It will make a handsome addition to your library.

Let us send you one
on approval. Price
\$2.00.

The
**American
Food
Journal**

15 S. Market Street
CHICAGO, ILL.



A Forecast of 1919

WHILE the last issue for the year of 1918 finds the American Food Journal under new management, we have only to glance at the first issue of this publication, which made its appearance thirteen years ago and contained a definite statement of its purposes and ideals; or hastily scan the pages of subsequent issues and note the nature and character of the articles printed; or run through the correspondence, glimpsing the many letters of commendation from food officials, legislators, food manufacturers and distributors and dietitians to get our cue as to policy and aims for future issues.

Briefly stated our policy for the future, as it has been in the past, shall be: To support, whole heartedly, the efforts of those whose duty it is to accomplish the enforcement of the pure food laws of the nation and the various states; to publish advance information regarding proposed food legislation and, wherever possible, to carry in our columns the opinions of experts as to the advantages or disadvantages of the proposed laws; to describe and illustrate methods and processes of manufacture or distribution of various food products; to inform dietitians of the latest and most noteworthy accomplishments in the field of dietetics; to record legal decisions that relate to food and otherwise seek to keep those who are most interested in the developments of the food situation informed of the latest moves.

We are fully conscious of the bigness of the job that we have tackled, because we know, as you know, that the developments of the past four years have made American food production and distribution matters of vital importance to most of the civilized world. The farmer, the manufacturer and the distributor of foodstuffs no longer assumes the "I-Should-Worry" attitude when the facts about the food situation in far-away countries are presented to him, and even the cross-roads grocer is coming to look upon his own wastefulness or economy as matters of international importance. So we say that we realize that this momentous change in the food situation;—the new attitude of producer and consumer,—has added to the responsibilities of the American Food Journal and it is with this consciousness that we are planning the editorial program for the year of 1919.

The Food Administration which came into existence when The United States entered the war, may or may not go out of existence, but it is certain that the work started will be continued either by legislative enactments or by educational forces that will spring up as the result of the necessity of continuing the food conservation work. And with this in view, we are planning a series of articles by experts in their field to cover this situation.

Cold Storage, which a few years ago was a joke, or a new form of fraud to all but a few, is now recognized as a most important equalizer of supply and demand and articles on this subject will appear from time to time during the next year.

Some troublesome planet must have been in the ascendancy when Oleomargarine was born into the world, for its progress has been marked by bitterness and rancor. We believe, however, that there is a well-defined place in the world for both oleo-

(Continued on page 684)

The New-Day Price Tags

Should Show Calories Per Pound

The Vital Point In Food Cost

The calory is the energy unit by which governments and experts measure food.

It is a major factor to consider in combating cost of living. Figure what you get per dollar as compared with Quaker Oats.

In these foods, for example:

Cost Per 1,000 Calories

Quaker Oats	- - - -	5 cents
Meats Average	- - - -	40 "
Fish Averages	- - - -	40 "
Canned Salmon	- - - -	33 "
Canned Corn	- - - -	30 "
Potatoes	- - - -	13 "
Canned Peas	- - - -	54 "

Most meat foods cost you 7 to 10 times Quaker Oats for the same calory units. And some foods cost you 20 times as much.

Then Quaker Oats is better balanced than these costly foods. It is richer in minerals. It is more nearly a complete food.

The oat is probably the greatest food that grows.

Use Quaker Oats to reduce your meat cost. Every dollar's worth used in that way saves \$7 on the average.

Then mix it with your flour foods. The more you use the more you save, and the better you are fed.

This great food in these times gains a multiplied importance.

12 to 13c and 30 to 32c per Package

Except in Far West and South.

Quaker Oats

The Extra-Flavory Flakes

A FAULTLESS FOOD PREPARATION

Today, more than ever, housewives are interested in food matters—not merely with the view of keeping down table cost but the element of quality is of vital consideration.

Nothing else is half as important as the selection of a properly balanced **baking powder**. Special conservation requirements have doubled the need for extreme caution in the selection of this much used pantry-item which, though not a food itself, has come into daily use as a preparer of foods.

Food officials and others who are interested in the great work of food conservation should recommend the use of the highest quality leavening agent—becoming public benefactors by insuring the results which should be accomplished.

The INDIAN HEAD trade-mark is an absolute guarantee of **uniformity, purity** and **dependableness** and of **utmost efficiency**, maintained regardless of conditions.

Calumet Baking Powder works for the public good—the best, the purest, the surest baking powder possible to produce—proven by the fact that it has passed the most rigid laboratory tests with a 100% score. It is used and endorsed by the world's eminent Domestic Scientists.

It is used in the United States Army and Navy.

It is used by America's patriotic housewives more than any other brand.

It is the most economical Baking Powder manufactured. It is a conservation Baking Powder in every sense of the word—sold at a moderate price—one pound, 30 cents—a big saving over high-priced Trust brands—allowing freer use of money for patriotic investments.

Food Officials can therefore well afford to definitely specify **Calumet Baking Powder** in connection with their Food Conservation work. There is no product in the world that is more rigidly standardized on the basis of highest quality.

Free Booklet—"Facts vs. Prejudice"

mailed upon request splendid interpretation of the Baking Powder facts.

Calumet Baking Powder Co.

4100 Fillmore Street

CHICAGO, ILL.



Ready for the demands of Peace as we were for those of War!

DURING the world war every demand made upon Wilson & Co. was met, and met without swerving from the announced principles and policies of the organization. The establishing of peace means responsibilities of even greater importance.

Our army and navy, as well as those of our allies, are still in service; they must be fed. The peoples of the war-stricken countries are calling for foods—particularly for meats and meat products. Here at home the necessity for a comprehensive food supply is just as great as ever.

We are grateful to every individual directly or indirectly connected with the Wilson organization for the competent, confident manner in which all are co-operating to enable the institution to accept and meet its responsibilities.

TO the general public we announce that we are as ready for the demands of peace as we made ourselves for those of war. The Wilson label has been established as a safe, sure guide to the buying of food products of wholly dependable quality.

Your own mother could not be more careful or more thoughtful in the preparation of the favorite dish of the family than we are in the selection, handling and preparation of the various Wilson products. The Wilson label shall always mean that the product it identifies has been prepared with the *respect* due that which you are to serve on your table.

The Wilson label is *earned* by Majestic Ham, Bacon and Lard; Certified Canned Vegetables, Fruits and Table Specialties; Oleomargarine, Nut-margarine; Clearbrook Eggs and Dairy Products; Sausages and Delicatessen Products.



The Wilson Label Protects Your Table

Use More Corn

There never was a time when it was more necessary for food control officials and food manufacturers to regard Indian corn and its many products with a clear gaze—free from tradition and bias.

Patriotism and self-interest, both, prompt all Americans to make the utmost use of this wonderful cereal and its products, of which we have so abundant a supply.

The Government is advising the use of corn products in every conceivable manner.

There are many manufactured products of corn the use of which in general food manufacture may, and should, be widely extended.

The members of this Association manufacture one or more of the following products of corn:

Corn Starch

Corn Syrup

Corn Sugar

Corn Oil

All inquiries in regard to the use of corn products in the food industry should be addressed to

American Manufacturers' Association of Products from Corn

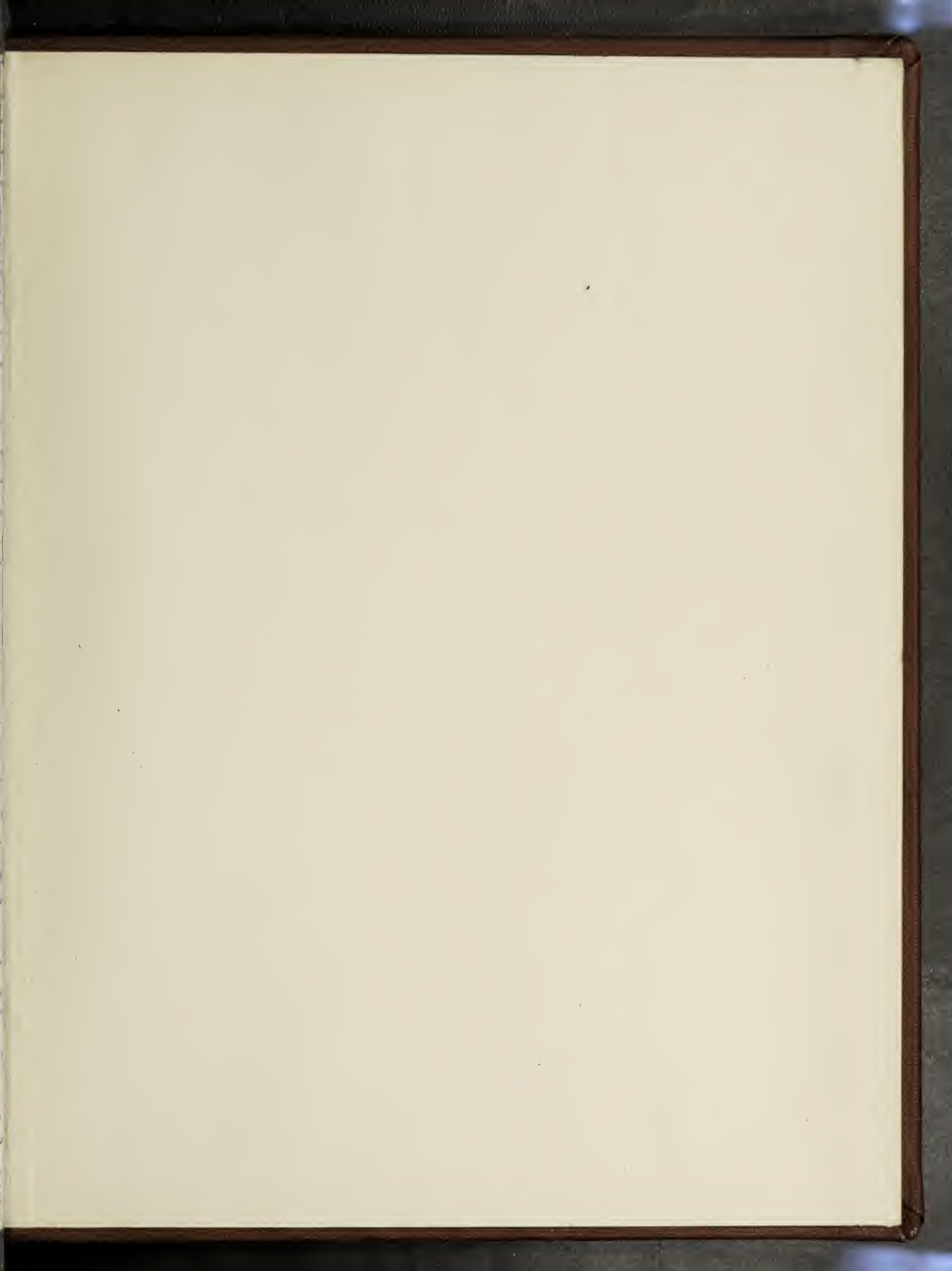
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CHICAGO, ILLINOIS

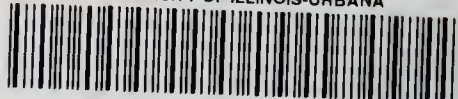
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